ADAPTATION FUND BOARD SECRETARIAT TECHNICAL REVIEW OF PROJECT/PROGRAMME PROPOSAL

PROJECT/PROGRAMME CATEGORY: Regular Size Full Proposal

Country/Region: Lebanon
Project Title: Climate Change Resilience and Ecosystem Connectivity (CC-REC)
Thematic Focal Area: Multisector Projects
Implementing Entity: International Fund for Agriculture Development (IFAD)
Executing Entities: Ministry of Environment
AF Project ID: AF00000379
IE Project ID:
Requested Financing from Adaptation Fund (US Dollars): 4,300,000
Reviewer and contact person: Hugo Remaury
Co-reviewer(s):
IE Contact Person: Walid Nasr

Technical Summary	The project "Climate Change Resilience and Ecosystem Connectivity (CC-REC)" aims to restore climate-smart landscapes and support resilient livelihoods in the Shouf-West Beqaa-Mount Hermon corridor through the adoption of nature-based solutions. This will be done through the three components below: Component 1: Capacity development and policies for resilient landscapes and livelihoods (USD 435,234) Component 2: Nature-based solutions for environmental, social, and economic sustainability (USD 2,858,558) Component 3: Climate resilience assessment, knowledge management and awareness raising (USD 293,353) Requested financing overview: Project/Programme Execution Cost: USD 376,000 Total Project/Programme Cost: USD 3,963,145 Implementing Fee: USD 336,855 Financing Requested: USD 4,300,000 The first technical review raises some issues, such as the use of Unidentified Sub-Projects, the need to further explain compliance with each national standard listed, to describe how the project will ensure that the grant activities will be delivered regardless of whether the intended in-kind contributions materialize or not, among

	others, as is discussed in the number of Clarification Requests (CRs) and Corrective Action Requests (CARs) raised in the review. The second technical review finds that the proposal has not addressed some of the CR and CAR requests. Namely, the proposal should refine some sections pertaining to compliance with the Adaptation Fund Environmental and Social Policy.
Date:	9 December 2024

Review Criteria	**Questions**	**FirstTechnical Review Comments, October 25, 2024**	**Second Technical Review Comments, December 9, 2024**	**IFAD Responses, December 18, 2024**
Country Eligibility	1. Is the country party to the Kyoto Protocol and/or the Paris Agreement?	**Yes.**	**-**	
	2. Is the country a developing country particularly vulnerable to the adverse effects of climate change?	**Yes.** Lebanon is experiencing climate change-induced increase in annual mean temperatures, decrease in rainfall amount, as well as more frequent extreme weather events, which makes the country particularly vulnerable to the adverse impacts of climate change.	**-**	
Project Eligibility	1. Has the designated government authority for the Adaptation Fund	**Yes.** As per the Endorsement letter dated 9 August 2024.		

	endorsed the project/programme?	**CR 1**: Please kindly replace the letter dated 29 November 2023 (p.99 of the proposal) by the more recent one inserted on p.2 of the annexes, dated 9 August 2024.	**CR 1: Cleared**, as per the revised letter inserted on p.108.	
	2. Does the length of the proposal amount to no more than One hundred (100) pages for the fully-developed project document, and one hundred (100) pages for its annexes?	**Yes.** **CR 2**: Please kindly remove the "Component Type" column from the "Project Components and Financing" table. **CR 3**: Please remove references to targets and indicators from the "Project Components and Financing" table.	**CR 2: Cleared**, as per the revised Project Components and Financing table inserted on p.30-31. **CR 3: Cleared**, as per the revised Project Components and Financing table inserted on p.30-31. **CAR 14**: 1. Due to changes in margins and indents, and additional information added, the proposal now exceeds the maximum length allowed for fully-developed project document (100 pages). Reverting to the original template formatting (i.e., margins at 0.98" and left/right indents at 0") should allow the	**CAR 14:** 1. Margins and indents have been adjusted in line with the guidance provided. 2. The checkboxes in the front cover page have been corrected.

			document to be close to 100 pages. 2. Please un-check the first submission box and include the latest date of submission of the proposal.	
	3. Does the project / programme support concrete adaptation actions to assist the country in addressing adaptive capacity to the adverse effects of climate change and build in climate resilience?	**Yes, but more information is needed.** **CAR1**: According to the information provided, the nature, characteristics and location of concrete activities planned under Component 2. will only be determined during implementation, hence representing a case of Unidentified Sub-Projects (USPs). Indeed, selection of the specific land plots will take place under output 1.1.1., whereas the concrete activities planned under Component 2 will only be determined upon selection of grant proposals/tenders during implementation. USPs are acceptable only on an exceptional	**CAR1: Cleared**, as per the additional information provided on p. 24-30, p. 35-38, 43, 48-51, and Annex 6 (p.189-197).	

		basis and their use must be well-justified. As a result, and in line with the Updated guidance for IEs on the use of USPs, please add in the proposal a justification for the proposed use of USPs. This justification needs to: i) provide the reasons why these activities cannot be formulated at the design stage, ii) must describe the specific benefits of not formulating an activity at that stage; and iii) should explain how these benefits outweigh the increased risk of non-complying with the ESP and GP. **CR4:** Please kindly: i) re-insert Figure 15 using a higher resolution, as it is currently unreadable; and iii) remove the "4. _____" from all relevant pages of the document.	**CR 4: Cleared**, as per the revised Figure 15 inserted on p.26 and references to 4. removed throughout the document. **CR 5: Cleared,** as per the reference to annex 2.2 added on p.15.	

		CR5: Annex 2.2 is currently not referenced anywhere in the proposal. Please consider adding a reference to this annex or removing it from the document.		
	4. Does the project / programme provide economic, social and environmental benefits, particularly to vulnerable communities, including gender considerations, while avoiding or mitigating negative impacts, in compliance with the Environmental and Social Policy and Gender Policy of the Fund?	**Yes.** As per the information provided in Section C (pages 54-56). **CR6**: Please kindly clarify whether the "*454 households with diversified revenues from C-smart interventions*" are the same individuals as the 454 "*trained farmers, shepherds, forest users and managers*" referred in the results framework under output 1.1.3. If they are indeed the same group, please kindly revise the proposal to ensure consistency in the terminology used, and use individuals, not households as unit.	**CR6: Cleared**, as per the revisions made on p.63.	

	5. Is the project / programme cost effective?	**Yes.** As per the information provided in Section C (pages 56-61). **CR7**: Please remove the repeated sentence beginning with "For instance…" included in both paragraphs 236 and 238 to avoid repetition.	**CR7: Cleared**, as per the revisions made on p.63.	
	6. Is the project / programme consistent with national or sub-national sustainable development strategies, national or sub-national development plans, poverty reduction strategies, national communications and adaptation programs of action and other relevant instruments?	**Yes.** As per the information provided in Section D (pages 35-37). **CR8:** Please shift to part II.D. of the proposal i) the country's Climate Change Adaptation Strategy and NAP Implementation Roadmap (currently referenced in part II.F); and ii) the National Forest Fire Management Strategy 2008, the National Afforestation Program, the National Agriculture Strategy 2020-202, the National	**CR8: Cleared,** as per the revisions made on p. 68-70.	

		Renewable Energy Action Plan (currently referenced in part II.E).		
	7. Does the project / programme meet the relevant national technical standards, where applicable, in compliance with the Environmental and Social Policy of the Fund?	**No.** **CAR2:** Further to the commitments made to comply with the national technical standards identified (e.g., "*The Project activities shall comply with the decision rules/law*" etc.), the proposal should describe for each standard identified i) the steps intended to be followed by the project to comply with the standard identified; and ii) the nature of the associated authorization/clearance granted. **CR9:** While acknowledging that no EIA may be needed as per the Decree 8633/2012, given the non-"complex" nature of the project activities, Initial Environmental Examination(s) might be needed to ensure	**CAR2: Cleared**, as per the additional information provided on p.71 to 75. **CR9: Cleared,** as per the additional information provided on p.71.	

		compliance with the Decree. As a result, please i) add in the proposal a commitment to request a confirmation from the MoE on the possible need to carry out IEE(s) at the onset of project implementation; and ii) briefly describe the necessary steps to comply with such IEE-related processes. **CR10**: Given the land tenure rights-related issues mentioned in several sections of the proposal, please confirm whether any additional land use or tenure regulations are relevant to the project. Whenever applicable, please add them to this section, include the legal source of the requirement, the steps taken to comply with it, and the nature of the authorization/clearance granted.	**CR10: Cleared**, as per the additional information provided on p.72.	
	8. Is there duplication of project / programme with	**Cleared.**		

	other funding sources?	As per the information provided in Section F (pages 67-70). **CR11**: In light of the grant-making related processes planned under Component 2, please consider exploring synergies with the GEF-funded Small Grant Programme (SGP) in Lebanon to build complementarity with this existing grant mechanism.	**CR11: Cleared,** as per the confirmation provided in the response sheet.	
	9. Does the project / programme have a learning and knowledge management component to capture and feedback lessons?	**Yes.** As per the information provided in Section G (pages 70-71).	**-**	
	10. Has a consultative process taken place, and has it involved all key stakeholders, and vulnerable groups, including gender considerations in compliance with the Environmental and Social Policy and	**Yes.** As per the information provided in Section H (pages 71-73) and Annex 2.	**-**	

	Gender Policy of the Fund?			
	11. Is the requested financing justified on the basis of full cost of adaptation reasoning?	**To be further demonstrated.** **CAR3**: Outputs 2.1.1, 2.1.2 and 2.2.2, which represent 70% of the total project comment cost, rely on a 25% in-kind contribution from grantees. In-kind contribution may consist in provision of labor, stones, transport, tools, equipment and machinery depending on the type of grants. The proposal values such contribution to USD 499,099 in total. The successful delivery of these outputs is therefore highly dependent on the grantee's capacity to provide such contributions. Please describe how the project will ensure that the grant activities will be delivered regardless of whether	**CAR3: Cleared,** as per the additional information provided on p.49 and 55.	

		these intended in-kind contributions materialize or not.		
	12. Is the project / program aligned with AF's results framework?	**Yes.** As per the information provided in part III.F (pages 95-96).	**-**	
	13. Has the sustainability of the project/programme outcomes been taken into account when designing the project?	**Partly.** **CR12**: Please add in this section a description of the concrete arrangements through which the project will be sustained from an institutional perspective. **CR13**: Please briefly describe in this section the arrangements through which the project will sustain the maintenance and operations of the briquettes and pellets factories established or upgraded under output 2.2.2.	**CR12: Cleared,** as per the additional information provided on p.87. **CR13: Cleared,** as per the additional information provided on p.87.	
	14. Does the project / programme provide an overview of environmental and	**Yes.** However, this section needs to be revised to	**CAR4: Not cleared.** Further revisions are needed to ensure compliance of the	**CAR4:** i) The relevant risks (1,4,6) have been included in

	social impacts / risks identified, in compliance with the Environmental and Social Policy and Gender Policy of the Fund?	align with the Environmental and Social Policy of the Fund. Please refer to the ESP guidance document and/or the ESP itself, as needed. **CAR4**: The ESP being risk-based, please screen the proposed project for each ESP principle and describe potential environmental and social impacts and risks (some of which are already described in section III of the ESMP) and need for further assessment and management in a substantiated manner. This should be done in the column "*Potential impacts and risks – further assessment and management required for compliance*". Please do not make any formatting changes to the template available in part III.K of the template for fully developed single country proposal. While undertaking	proposal with the ESP, namely: i) As outlined in the relevant guidance document, Principles 1, 4 and 6 always apply. The "*Environment and Social Impact Assessment*" section of the ESMP/Annex 3 should be revised accordingly, as well as the column "*Potential impacts and risks – further assessment and management required for compliance*" in table 31. ii) The "*Environment and Social Impact Assessment*" section of the ESMP/Annex 3 implicitly acknowledges risks related to principles 2 (risk of unfair and discriminatory distribution of benefits, favouritism), 3 (risk of excluding marginalized groups) and 5 (risk of unequal distribution of benefits across men and women). Such risks should be reflected in the column "*Potential impacts and risks – further assessment and management required for compliance"* in table 31. As a reminder, no risk mitigation measures or expected positive project outcomes should be	Table 31 and mitigation measures added to the ESMP in Annex 3. ii) Additional risks added in Table 31 and mitigation measures in the ESMP. iii) Done iv) Done

		such a screening, please i) keep in mind that no risk mitigation measures or expected positive project outcomes should be considered during the risk screening process, since such measures should be instead described in the ESMP; ii) consider all potential direct, indirect, transboundary, and cumulative impacts and risks that could result from the project; iii) ensure that findings are evidence-based and substantiated; iv) note that only for those principles for which risks have not been identified, the column "*No further assessment required for compliance*" should be ticked. **CAR5**: Principle 3: as part of the risk screening process, please kindly identify any marginalized and vulnerable groups (including refugees	considered during the risk screening process. iii) Only potential environmental and social risks identified should be described in table 31 column on "*Potential impacts and risks – further assessment and management required for compliance*". All risks mitigation measures currently described in this table should instead be shifted to section IV. of the ESMP. iv) According to the screening presented in section III of the ESMP, the "*No further assessment required for compliance*" column in table 31 should only be ticked for Principles 7, 8, 9, 10, 11, 14 and 15. **CAR5: Cleared**, as per the commitment made by IFAD in the ESMP/Annex 3 to assess the presence of both refugees and IDPs whenever the security situation improves, conduct consultations and assessments with the relevant stakeholders and local authorities, and tailor the	

		and internally displaced persons) and differentiate the potential related risks in a non-generic manner. Should marginalized and vulnerable groups (including internally displaced persons) be identified, please i) describe in part II.B. particular benefits provided by the project to such groups; and ii) confirm in part II.H. that such groups were consulted during project design – if not, the consultation of such groups may only be deferred to the implementation stage under extraordinary circumstances, if it enables a more effective consultation (e.g. if beneficiaries for specific activities have not been identified yet").	project activities accordingly, if needed.	
Resource Availability	1. Is the requested project / programme funding within the cap of the country?	**Yes.**	**-**	

	2. Is the Implementing Entity Management Fee at or below 8.5 per cent of the total project/programme budget before the fee?	**Yes.**	**-**	
	3. Are the Project/Programme Execution Costs at or below 9.5 per cent of the total project/programme budget (including the fee)?	**Yes.**	**-**	
Eligibility of IE	1. Is the project/programme submitted through an eligible Implementing Entity that has been accredited by the Board?	**Yes.** IFAD's accreditation expiration date is 21 December 2025.	**-**	
Implementation Arrangements	1. Is there adequate arrangement for project / programme management, in compliance with the Gender Policy of the Fund?	**Yes.** As per the information provided in part III-A (pages 82-87).	**-**	
	2. Are there measures for financial and project/programme risk management?	**Yes.** However, this section should be significantly strengthened to identify risks and associated mitigation	**CR6: Not cleared.** Table 32 should categorize each risks identified (i.e. financial, environmental, social, geo-political, institutional etc.). Please enter the category	**CR6:** Done

		measures beyond those related to financial risk only, as it is currently the case. **CAR6:** The proposal shall identify all major risks, consider their significance, and include a plan of monitoring and mitigating them. It should provide a table with detailed information on the different categories of risks (i.e. financial, environmental, social, geo-political, institutional etc.), their level of risks, and how they will be managed.	before the listed description. E.g. "**Institutional**: Weak capacity…"	
	3. Are there measures in place for the management of environmental and social risks, in line with the Environmental and Social Policy and Gender Policy of the Fund?	**Yes.** However, this section needs to be revised to align with the Environmental and Social Policy of the Fund. Please refer to the ESP guidance document and/or the ESP itself, as needed, as well as the Updated	**CAR7: Not cleared.** Further revisions of the ESMP section IV are needed to ensure compliance with the ESP, namely: i) For all principles that apply (i.e., 1, 2, 3, 4, 5, 6, 12, 13), the ESMP ("ESCMP Matrix") should list all potential environmental and social risks identified in section III of the ESMP. These risks should mirror those presented in	**CAR7:** i) All additional risks have been included in the ESCMP ii) Mitigation measures have been included in the ESCMP iii) The statement has been edited to include the additional risks identified iv) The commitment has been reflected

		guidance for IEs on the use of USPs. **CAR7**: Once environmental and social impacts and risks are duly identified, the ESMP should be revised to: i) to ensure a homogenous description of the risks/impacts' identified across all sections of the proposal (particularly between part II-K and Annex 3); ii) describe the risk mitigation measures to avoid, minimize, manage or mitigate all impacts and risks identified during the screening exercise; iii) update the monitoring and evaluation arrangements, as necessary; iv) include opportunities for consultation and adaptive management during implementation; v) describe credible budget provisions for the implementation of the ESMP; vi) describe	section II.K of the proposal (see CAR4 above). ii) For each risk identified, the ESMP ("ESCMP Matrix") should describe the mitigation measures to avoid, minimize, manage or mitigate the risks identified. iii) The statement "*The monitoring and reporting of the ESMP will be commensurate with the limited ESMP requirements for the project. ESP compliance for ESPs 3,12 and 13 will be reported on through the annual PPR*" should be revised to include all principles that apply (i.e., 1, 2, 3, 4, 5, 6, 12, 13). iv) The commitment made by IFAD with respect to Principle 3 "*to assess the presence of both refugees and IDPs whenever the security situation improves, conduct consultations and assessments with the relevant stakeholders and local authorities, and tailor the project activities accordingly, if*	v) Budget provisions have been included, noting that the measures proposed are embedded in project activities' cost or conducted by experts in the PMU with no separate budget requirements. vi) Done vii)The project conducted extensive gender-balanced consultations in the target area, including marginalized populations and key local stakeholders. These consultations included a detailed presentation of activities with the connected risks and mitigation measures. Moreover, the project has a strong community focus with only minor risks that will be mitigated through project activities and specific assessments done by the PMU.

		arrangements for IFAD to supervise ACS during the implementation of the ESMP; vii) confirm whether the ESMP was made available for public consultations that were timely, effective, inclusive, and held free of coercion. **CAR8**: Given that the project contains USPs, the proposal should also i) include a commitment that each USP will go through the same risks identification process and subsequent safeguards steps as guided by the AF ESP; ii) include a detailed, budget process for ESP and GP compliance for each USP as and when it is identified; iii) allocate clear roles and responsibilities for applying ESP and GP compliance processes to the USPs; iv) confirm in the description of the	*needed*" must be reflected in the ESMP ("ESCMP Matrix"). v) The proposal should describe credible budget provisions for the implementation of the ESMP. This made be done in the "ESMP Monitoring and reporting" section. vi) The proposal should describe how it will supervise ACS to monitor the ESMP during project implementation. This may be done in the "ESMP Monitoring and reporting" section. vii) The proposal should confirm whether the ESMP was made available for public consultations that were timely, effective, inclusive, and held free of coercion. **CAR8: Cleared,** as per the additional information provided on p. 24-30, p. 35-38, 43, 48-51, and Annex 6 (p.189-197).	

		grievance redress mechanism (annex 5) that it will accommodate grievances from the whole range of possible USPs, be known to stakeholders involved in USPs and be able to receive complaints related to the USPs; and v) confirm that budget provisions for the implementation of the ESMP are adequate to cover any extra costs that this case of USPs may generate to ensure compliance with the ESP.		
	4. Is a budget on the Implementing Entity Management Fee use included?	**Yes.** **CR14:** Please briefly describe the type of expenditures that the "*Financial Manager*", "*Programme Support*" and "*Technical support*" budget lines entail, keeping into consideration the relevant guidance on fees and costs.	**CR14: Cleared,** as per the additional information provided on p.106.	

	5. Is an explanation and a breakdown of the execution costs included?	**Yes.**	**-**	
	6. Is a detailed budget including budget notes included?	**Yes.** **CR15:** The figure provided for Component 1 on p. 97 of the proposal (USD 435,234) differs with the one presented in the "*Project Component and Financing*" table (which totals USD 352,734). Please correct this discrepancy. **CR16:** While several sections of the proposal refer to an expected USD 1,304,300 of in-kind contributions, the table included in part III.G of the proposal presents a total of USD 499,099 in-kind contributions. Please correct this discrepancy throughout the relevant sections of the proposal.	**CR15: Cleared**, as per the revised project component and financing table presented on p. 31-32. **CR16: Cleared,** as per the revisions made on p.105.	
	7. Are arrangements for monitoring and	**No.**		

	evaluation clearly defined, including budgeted M&E plans and sex-disaggregated data, targets and indicators, in compliance with the Gender Policy of the Fund?	**CAR9:** Currently there is no assurance that the project M&E plan will implement a gender-responsive monitoring approach. This would not be in line with the Gender Policy, which requests fully-developed proposals to include such a gender-responsive M&E system. Please kindly revise the proposal accordingly, referring to the Guidance document for Implementing Entities on compliance with the AF Gender Policy, as needed. **CR17:** Please kindly revise this section to ensure that the project M&E Plan addresses management of the environmental and social risks identified. **CR18**: Given that the project includes USPs, please describe in this section how any USPs	**CAR9: Cleared,** as per the additional information provided on p.97. **CR17: Cleared,** as per the additional information provided on p.97. **CR18: Cleared,** as per the additional information provided on p. 24-30, p. 35-38, 43, 48-51, and Annex 6 (p.189-197).	

		will be accounted for during implementation.		
	8. Does the M&E Framework include a break-down of how implementing entity IE fees will be utilized in the supervision of the M&E function?	**Yes.** **CAR10:** Please note that the items included under the "*Contribution of project budget to M&E (AF)*" and "*Contribution of project budget to M&E*" sections of the p.91 table should be charged against the EE cost instead of being charged to project components. Please revise this section accordingly.	**CAR10: Not cleared.** The table presented in p.100 should be revised as follows: i) the USD 55,600 allocated to the baseline study, aannual workplan and budgets, M&E specialist salary (quarterly progress report, semi-annual progress report, annual project report), and project completion survey and process should be labelled "Contribution of Project Execution Costs to M&E" instead of "Contribution of Project budget to M&E"; and ii) the USD 20,000 allocated to the Final Evaluation should be charged under the "Contribution of Project Execution Costs to M&E" instead of "Contribution of IE fees to M&E". The latter should also be reflected in a revised project budget in part III.G. If needed, please refer to the relevant guidance on the AF website on fees and costs.	**CAR10:** i) Done ii) Done
	9. Does the project/programme's results framework align with the AF's results framework? Does it include at	**Yes.** **CAR11:** Although the description of activities in Part II.A refers to gender-responsive	**CAR11: Not cleared.** In the "Unit" column, please add a "Women" label to the targets	**CAR11:** Done

	least one core outcome indicator from the Fund's results framework?	targets, they are currently not reflected in the project results framework presented in part III.E. Please revise the results framework to ensure it includes gender-disaggregated targets. **CAR12:** Given the emphasis placed on gender-responsive activities under output 2.2.2, please consider adding at least one gender-responsive indicator (and associated target) to the project results framework. **CR19**: Given that the project includes USPs, please acknowledge the uncertainties associated with USPs in meeting the indicators and targets set and explain how the project will meet its objectives regardless. **CR20:** Please kindly highlight the different AF Core Indicators	set for the Number of (women) beneficiaries (direct/indirect). **CAR12: Cleared**, as per the additional indicator added in the results framework on p.103. **CR19: Cleared,** as per the additional information provided on p. 24-30, p. 35-38, 43, 48-51, and Annex 6 (p.189-197). **CR20: Cleared,** as per the additional information provided on p.101-103	

		included in the results framework by adding a "AF Core indicator" note in brackets in the "Indicators" column.	• **CR21 (NEW):** Given that the AF core indicator template will allow for detailing more accurately baseline and targets, the AF core indicators chosen please utilize the approved template. For example, 'hectares of land' is not the AF core indicator rather "Natural Assets Protected or Rehabilitated" which requires hectares of land to be reported. It also requires Effectiveness of protection/rehabilitation - Scale (1-5). Please utilize the AF core indicator template to record the core indicators available at Methodologies for reporting Adaptation Fund core impact indicators (**For fully-developed proposals**) (78 kB, DOC)	**CR21:** Done. The requested tables have been included in a new Annex (Annex 7) We also took the opportunity of checking the reference to AF core impact indicators throughout the text and removed Table 21 for sake of clarity during implementation and reporting, as the table was wrongly labelled and the related indicators are already captured in the logframe.
	10. Is a disbursement schedule with time-	**Yes.**		

	bound milestones included?	**CAR13:** Please revise the disbursement table to ensure it complies with the prescribed format.	**CAR13: Cleared,** as per the revised disbursement schedule provided on p.107.	

FULLY DEVELOPED PROPOSAL FOR SINGLE COUNTRY

PART I: PROJECT/PROGRAMME INFORMATION

Title of Project: Climate Change Resilience and Ecosystem Connectivity (CC-REC).

Country: Lebanon

Thematic Focal Area: Ecosystem resilience, agriculture resilience, multiple focal areas

Type of Implementing Entity: Multilateral Implementing Entity

Implementing Entity: International Fund for Agriculture Development

Executing Entities: Al-Shouf Cedar Society (ACS)

Amount of Financing Requested: 4,300,000 (in U.S Dollars Equivalent)

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

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

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

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: 11/29/2024

Deleted: ☐

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Contents Annexes Acronyms

4NC	4th National Communication to the UNFCCC
ACE	Association for Community and Environment
ACS	Al-Shouf Cedar Society
ADR	Association for the Development of Rural Capacities
AF	Adaptation Fund
AFDC	Association for Forest, Development and Conservation
AICS	Italian Aid Agency
APAC	Appointed Protected Area Committees
AWPB	Annual work plan and budget
BA	Biodynamic Agriculture
CARE	Cooperative for Assistance and Relief Everywhere
CC	Climate change
CCA	Common Country Analysis
CDR	Council for Development and Reconstruction
CE	Customer Experience
COP	Conference of Parties
CREAL	Lebanese Centre for Research and Agriculture Studies
CSR	Corporate Social Responsibility
DGUP	Directorate General of Urban Planning
DMO	Destination Management Organization
DRM	Disaster Risk Management
DSS	Decision Support System
EHF	Extreme Heat Factor
EIA	Environmental Impact Assessment
ESIA	Environmental and Social Impact Assessment
ESMP	Environmental and Social Management Plan
ETC-UMA	European Topic Centre on Spatial Analysis and Synthesis,
Univ. Malaga EU	European Union
FAO	Food and Agriculture Organization
FFF	Forest and Farm Facility
FIR	Fire Ignition Risk
FLR	Forest Landscape Restoration
FSR	Fire Spread Risk
GDP	Gross Domestic Product
GEF	Global Environment Facility
GHG	Green House Gas
GIS	Geographic Information System
GIZ	German Technical Cooperation
GPFLR	Global Partnership on Forest Landscape Restoration
HCRA	High Climate Risk Areas
HDS	Household deprivation score
HSDI	Heat Stress Duration Index
IDAL	Investment Development Authority
IBA	Important Bird Area
IBP	Index of Biodiversity Potential
ICARDA	International Centre for Agricultural Research in the Dry Areas
IFAD	International Fund for Agriculture Development
IMET	Integrated Management Effectiveness Tool
IPCC	Intergovernmental Panel on Climate Change
IPM	Integrated pest management
IUCN	International Union for Nature Conservation
KBA	Key Biodiversity Area
LARI	Lebanese Agriculture Research Institute
LC	Land Cover
LCV	Lower calorific value
LDN	Land Degradation Neutrality
LRI	Lebanon Reforestation Initiative
LST	Land surface temperature
LU	Land Use

MEHE	Ministry of Education and Higher Education
MHNR	Mount Hermon Nature Reserve
MIM	Ministry of Interior and Municipalities
MoA	Ministry of Agriculture
MoE	Ministry of Environment
MoET	Ministry of Economy and Trade
MoEW	Ministry of Energy and Water
MoI	Ministry of Industry
MoPWT	Ministry of Public Works and Transport
MSME	Micro, Small and Medium Enterprises
MTR	Mid-term review
M&E	Monitoring and Evaluation
NARP	National Afforestation/Reforestation Program
NAS	National Agriculture Strategy
NbS	Nature-based Solution
NBSAP	National Biodiversity Strategy and Action Plan
NCE	National Council for Environment
NDC	Nationally Determined Contribution to the UNFCCC
NDVI	Normalized Difference Vegetation Index
NFP	National Forest Program
NGO	Non-Governmental Organization
NPMPLT	National Physical Master Plan of the Lebanese Territories
NREAP	National Renewable Energy Action Plan
NTFP	Non-Timber Forest Products
OMSWA	Office of the Minister of State for Women Affairs
OWL	Other wooded lands
PA	Protected Area
PIM	Project Implementation Manual
PMU	Project Management Unit
PPR	Project performance report
PRL	Palestine Refugees in Lebanon
RCP	Representative concentration pathways Climate Change Scenarios
RS	Remote sensing
SADC	Shouf Area Development Committee
SD	Service Design
SPAMI	Specially Protected Area on Mediterranean Importance
SBR	Shouf Biosphere Reserve
SDG	Sustainable Development Goals
SPI	Standardized Precipitation Index
SPNL	Society for the Protection of Nature in Lebanon
SSP	Shared Socioeconomic Pathways Climate Change Scenarios
SSTC	South-South and Triangular Cooperation
ToC	Theory of Change
ToT	Training of Trainers
UNCCD	United Nations Convention to Combat Desertification
UNDP	United Nations Development Program
UNESCO	UN Educational, Scientific and Cultural Organization
UNFCCC	United Nations Framework Convention on Climate
Change UNSDCF	United Nations Sustainable Development
Cooperation Framework USAID	U.S. Agency for International Development
VC	Value Chain
WB	The World Bank
WFP	World Food Program
Y	Year

Project Background and Context

1. *National context*

1. The economic, political, and social crisis affecting Lebanon since 2019 has caused significant deterioration in the welfare of its population. The gross domestic product decreased from USD 55 billion in 2018 to USD 20.5 billion in 2021[1] and the World Bank downgraded Lebanon to a lower middle-income country for the first time in 27 years. The lifting of state subsidies on medicine, fuel and input costs, the depreciation of the Lebanese lira, prolonged inflation and soaring international prices continue to threaten the ability of Lebanese households to meet their basic needs[2]. By December 2021, 53 percent of the Lebanese resident population, corresponding to 2.06 million people, needed social assistance. Since then, 400,000 more people have fallen into poverty because of rising food insecurity (57 percent of Lebanese families by December 2021), high unemployment, decimated salaries due to the Lebanese Pound depreciation, stagnating household incomes, and poor access to public services.

2. The ongoing economic crisis is weakening the country's human, natural, and physical capital, eroding its already limited capacity to adapt to climate change[3]. Climate change impacts are projected to reduce Lebanon's growth potential by up to 2 percent annually by 2040 and threaten service provision, especially in water and energy, hindering key growth sectors such as agriculture and tourism[4]. According to the Lebanon's Nationally Determined Contribution to the UNFCCC[5], building adaptive and resilience capacity against climatic shocks, especially in the water, ecosystem conservation and management, agricultural, and tourism sectors, will support Lebanon's recovery and protect livelihoods.

2. The context in which the project would operate

Geographic Location

3. The project would operate in three contiguous landscapes along a corridor connecting three nature reserves of high ecological value:

- The Shouf Landscape covers an area of 13,774 ha overlapping with 18 municipalities that form the development and transition zones of the central- and south-western part of the Shouf Biosphere Reserve (SBR), between the towns of Barouk at its northern end and Niha at its southern end.
- The West Beqaa Landscape covers an area of 16,677 ha overlapping with 19 municipalities that extend from the central- and north-easter part of the SBR mountain slopes at its western ends, through the Litani river floodplain including the Ammiq wetland Ramsar Site, to the foothills at its eastern end that separate the floodplain from the Rashaya region.
- The Rashaya Landscape covers an area of 11,607 ha overlapping with 6 municipalities in the northern extreme of the Mount Hermon Key Biodiversity Area in the Rashaya region.

Biodiversity and Nature Protection

4. Lebanon encompasses four climate-geographical zones: (i) a flat, narrow coastal plain that runs parallel to the Mediterranean Sea; (ii) the Lebanon Mountains; (iii) the Beqaa Valley; and (iv) the Anti-Lebanon mountain range. The climate is characterized by hot, dry summers with low precipitation levels (June–Sept.) and cool, rainy winters (December – mid-March). All rivers in Lebanon including the Litani river are replenished annually by local precipitation events, which tend to be restricted to around 90 to 100 days between October and April, and to snowmelt.

5. Biodiversity: There are 9,116 known species in Lebanon, including both fauna (4,486 species) and flora (around 4,630 species)[6], with a high percentage of endemic plant species (12 percent)[7]. One of the most remarkable features about Lebanon is the presence of such biodiversity in a very limited area of land: Lebanon's vegetation has a very high species-area ratio of 0.25 species/km2 and fauna species-area ratio reaches 0.028 species/km2. Fifteen Nature Reserves, the best established, managed, and studied form of protected areas in the country, occupy around 2.7 percent of the country's area. On a global scale, the country includes three biosphere reserves, fourRamsar sites, fifteen Important Bird Areas (IBA), two "Specially Protected Areas of Mediterranean Importance" (SPAMI), and twenty-six Key Biodiversity Areas (KBA) of Regional and/or Global significance[8].

6. The Shouf-West Beqaa-Mount Hermon corridor, that defines the project target landscapes, has outstanding biodiversity values: (i) the Shouf Biosphere Reserve (SBR), that also includes the Al Shouf Cedars Nature Reserve and IBA; (ii) the Lake Ammiq Ramsar Site and IBA, which is included within the SBR boundaries in the West Beqaa floodplain and (ii) the Mount Hermon Nature Reserve (MHNR) which is in the process to become the core zone of a

[1] World Bank, 2022. World Development Indicators.

[2] WFP. 2022. Food Security and Vulnerability Analysis of Lebanese Residents. WFP Lebanon Research, Assessment & Monitoring Unit.

[3] In 2023, Lebanon ranked 117 out of 192 countries in terms of readiness to face climate change according to the Notre Dame Global Adaptation Initiative Country Index (https://gain.nd.edu/our-work/country-index/rankings/).

[4] World Bank Group. 2024. Lebanon Country Climate and Development Report.

[5] Lebanon's 2020 Nationally Determined Contribution Update.

[6] MoA. (1996). Biological Diversity of Lebanon – Country Study Report. UNEP.

[7] MoE/UNDP. (2011). State and Trends of the Lebanese Environment (SOER).

[8] https://www.keybiodiversityareas.org

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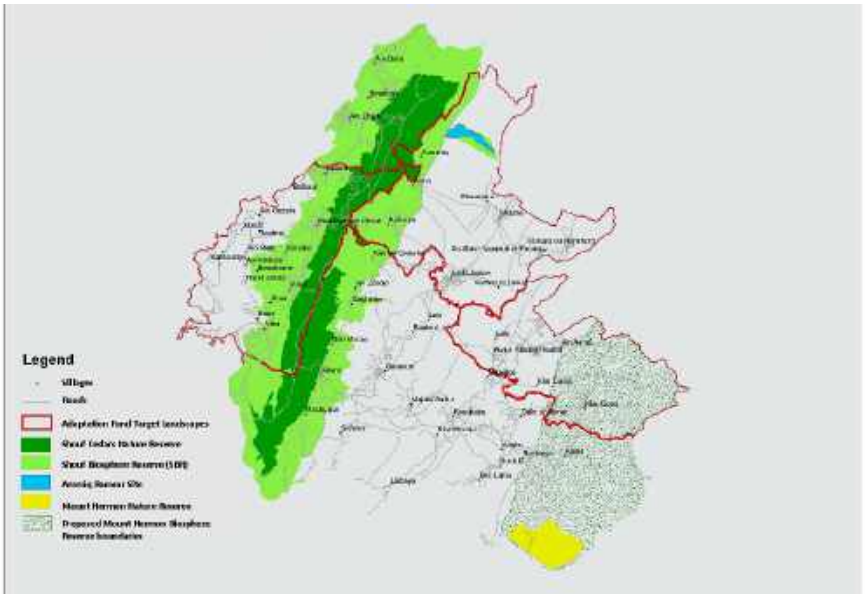
new Biosphere Reserve proposed for the vast area covered by the globally significant Mount Hermon KBA.

Figure 1. Key Biodiversity Areas and the boundaries of the Adaptation Fund target landscapes (CNRS/Lebanon, 2017)



7. **The Shouf Biosphere Reserve (SBR)**[9] extends over 50,000 ha in the Shouf and West Beqaa sides of Mount Lebanon. The reserve is home to more than 120,000 inhabitants, spread over 28 municipalities. For management purposes, the SBR is divided into: (i) core zone, covering an area of about 115.5 km2 with the objective to protect and rehabilitate the SBR's natural and cultural values; (ii) buffer zone, covering an area of about 64.5 km2 surrounding the core zone and where activities compatible with the conservation objectives can take place (such as ecotourism or agriculture); and (iii) development zone, covering an area of about 320 km2 that includes 28 villages surrounding the SBR where sustainable resource management practices are promoted. The SBR hosts a large set of habitat types, including the lower elevations that are dominated by the evergreen oak *Quercus calliprinos*, the deciduous oak *Quercus infectoria*, the Stone pine *Pinus pinea* and the Calabrian pine *Pinus brutia*. The upper elevations host Lebanese cedar (*Cedrus libani*) and *Quercus look* forests, as well as very rich high mountain pastures and thorny cushion shrub communities. The rivers in the western side of the landscape are characterized by Oriental alder (*Alnus orientalis*), Oriental plane tree (*Platanus orientalis*), the White poplar (*Populus alba*), and several willow species (*Salix libani, Salix alba)*. So far, more than 1,200 vascular plant species are known in the SBR landscape. The landscape is rich in medicinal, edible and aromatic plants that are harvested by local inhabitants. It is also home to 32 mammal species, 275 bird species, and 36 species of herpetofauna. Traditional cultural practices linked to agricultural, pastoral and forestry systems helped shape the landscape, because of the efforts made by rural communities. Agriculture is the main land use, covering 30 percent of the territory, of which 19.4 percent is currently abandoned. Forests cover 16.1 percent of the landscape, and pastureland occupies 14 percent, from which 61.5 percent are high mountain grasslands located in the core zone, and 38.5 percent are low mountain pastures where livestock grazing is allowed[10].

8. **Ammiq wetland Ramsar Site**[11]: this is a privately-owned area of approx. 280 hectares, which is also included within the SBR boundaries. The area is in the northwestern part of the West Beqaa floodplain (between the municipalities of Kefraya and Qab Elias), expanding from the slopes of Mount Barouk to the Litani. The reserve is characterized by two main habitats: (i) "Mediterranean Temporary Ponds" characterized by very shallow seasonal water from winter till late spring and pland species such as Agrotis, Juncus, Ranunculus, Anthemis, Scirpus, Cyperus michelianus, Mentha pulegium, etc; (ii) "Rivers with muddy banks with Chenopodium rubri and Bidenthion". The Wetland is one of the last remaining inland freshwater ecosystems of significant size in Lebanon, with a very positive ecological status,

[9] Regato P., M. Pagliani & N. Hani. 2020. Woody Energy Value Chains: Briquette production within the adaptive Forest Landscape Restoration plan in the Shouf Biosphere Reserve, Lebanon. In: Global Bioenergy Partnership. Working Together for Sustainable Development.

[10] Regato, P. 2020. Forest and Landscape Restoration Guidelines: Regaining Landscape Resilience, Ecological Functionality and Human Well- being. The Shouf Biosphere Reserve. Hani, N., M. Pagliani & P. Regato Editors. Lebanon.

[11] Information Sheet on Ramsar Wetlands (RIS) - 2009-2012 version. http://www.ramsar.org/ris/key_ris_index.htm.

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in terms of habitat diversity and rich biodiversity. It was declared an Important Bird Area (IBA) in 1994 due to the 245 bird species and hundreds of thousands of migrating birds that use the marsh as a stopover site. The site also encompasses 131 floral species (10 nationally threatened species, 2 endemic and 5 rare species), 20 mammal species (4 globally important species and 2 locally threatened species), 16 reptiles and 7 amphibian (10 regionally threatened), 7 fish species including the Lebanese endemic Phoxillenis libani, and 171 invertebrates (1 threatened, 3 rare, and 17 endemic).

9. **Mt Hermon nature reserve (MHNR)**, with an extension of 1,260 hectares, is a hotspot of plant diversity and endemicity, with significant number of crop wild relatives[12].The traditional crop products of the region - grape molasses, bulgur, wine and vinegar, traditional dairy products, and medicinal/aromatic plants - have a reputation for high quality and health throughout Lebanon. The middle elevations between 1300 m and 1900 m host highly diverse oak forest stands with *Quercus calliprinos, Q. look, Q. cedrorum, and Q. infectoria*, as well as crop wild relatives such as *Prunus ursina, Pyrus syriaca* and *Prunus dulcis*. The upper areas above 1900 m are characterized by endemic thorny cushion shrubs. Uncontrolled goat grazing stands as one of the important life- support systems of the area, causing serious overgrazing and land degradation problems.

10. According to the preliminary results[13] of the biodiversity assessment undertaken by several experts on flora and fauna taxonomic groups in the framework of the BioConnect Project, the rich mosaic of natural and seminatural habitats in the Shouf-West Beqaa-Mount Hermon corridor, contributes to a high diversity of habitats and species. The buffer zone of Mount Hermon, the eastern slopes of the SBR and the areas between them are highly rich in wild crop relatives. This corridor is a center of diversity for cereals (*Aegilops, Avena, Hordeum, Triticum, etc*), legumes (*Coronilla, Lens, Lathyrus, Medicago, Pisum, Vicia, etc.*), and fruit trees (*Amygdalus, Crataegus, Malus, Pistacia, Prunus, Pyrus*) among others. These species are particularly important because they are already coping with aridity and high or cold temperatures. Other species of interest belonging to the *Apiaceae, Brassicaceae and Lamiaceae*, families, are widely used in culinary recipes by the locals and contribute substantially to food security. All these species play a major role in the production of climate-adapted fruit tree seedlings and selected herbal crop species and varieties. Several initiatives in this sense already exist, involving ICARDA and LARI[14].

11. Biodiversity threats in the Shouf-West Beqaa-Mount Hermon corridor vary depending on the area[15]. Past rural abandonment, mainly in the western slopes of the Shouf Biosphere Reserve, has caused a significant accumulation of dry biomass in secondary pine forests and stagnated oak coppice stands, with forest biodiversity loss and increased climatic risks exacerbated by climate change, such as forest dieback and the risk of fires. Uncontrolled urban development and quarries in the wildland-urban interface entails a significant increase in the risk of fire ignition, in addition to habitat fragmentation, impact on the populations of endemic and rare species, and soil and water pollution problems. Unorganized overgrazing pressures mainly occur at the mountainous ends of the West Beqaa and the Mount Hermon in Rashaya region. Uncontrolled harvesting of non-wood forest and pasture products and uncontrolled hunting are also stressing the populations of flora and fauna species with social value. The Litani river floodplain in the West Beqaa suffers from water and soilpollution caused by the excessive use of agrochemicals in crop production and improper urban/industrial solid and liquid waste management[16].

12. In recent years, the SBR management organization (ACS) has made significant efforts that have reinforced surveillance of uncontrolled actions within the reserve, increased awareness among the local population and visitors on sustainable environmental practices, developed alternative productive activities to reduce pressure on the native populations of plant species and uncontrolled firewood collection, improved spatial planning, cadastrial mapping and conflict resolution on tenure rights, and developed pilot actions for the restoration of ecosystems and sustainable productive systems with the involvement of the local population.

Land Use Context

13. The target landscapes are characterized by a mosaic of land uses that include: (i) different types of broadleaved, coniferous and mixed forests and their serial stages, (ii) different types of pastures, (iii) different types of terraced agricultural systems of mountains and irrigated and dry crop fields in flat areas; (iv) artificial urban and industrial areas; (v) degraded and/or unproductive rocky areas. Each landscape is characterized by a differentiated mosaic pattern of uses: the Shouf landscape is the most forested one, alternating forests with traditional systems of dry stone wall terraces with olive groves and fruit trees; the West Beqaa landscape is dominated by the alternation of extensive herbaceous crops in an irrigated perimeter, woody crops (mainly vineyards) and wetlands; and the Rashaya landscape is dominated by large hilly areas with more or less degraded pastures that alternate with small valleys cultivated with traditional rainfed cereal and legume crops.

Figure 2. Land use/Land cover types in the target landscapes (CNRS/Lebanon, 2017)

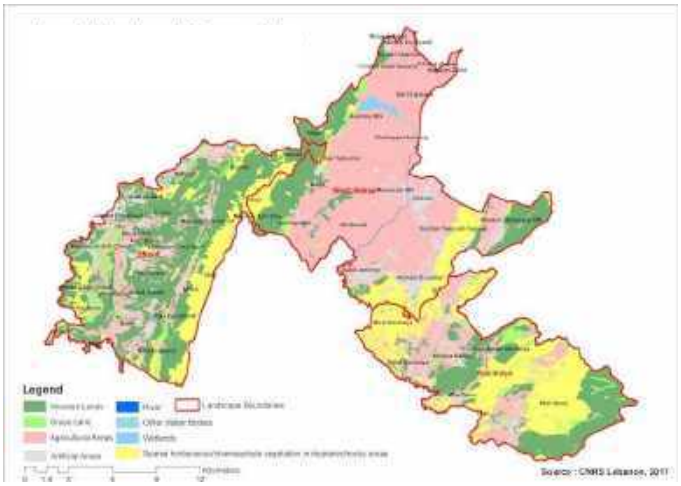
[12] Arnold, N., Raus, T., Chalak, L. and Baydoun S. (2015). Vascular plants of Mount Hermon, Lebanon and their ethnobotanical traits. 1. Flora Mediterranea.

[13] Personal communication in the framework of workshop with biodiversity experts during the field mission in October 2023.

[14] Crop Trust's Crop Wild Relatives (CWR) Project, in partnership with the Millennium Seed Bank (MSB), The Norwegian Development Cooperation (NORAD), and the Svalbard Global Seed Vault.

[15] Regato, P. 2020. Forest and Landscape Restoration Guidelines: Regaining Landscape Resilience, Ecological Functionality and Human Well- being. The Shouf Biosphere Reserve. Hani, N., M. Pagliani & P. Regato Editors. Lebanon.

[16] ELARD Lebanon. 2021. provision of services for the development of local level master plans and detailed urban plans in the qaraoun catchment. sea report. UNDP.



14. The predominant land uses are agriculture land with a total cover of 15,051 hectares (68 percent in the West Beqaa, 17 percent in Rashaya and 15 percent in the Shouf) and forestland with a total cover of 12,628 hectares (54.4 percent in the Shouf, 24.4 percent in Rashaya and 21.2 percent in West Beqaa). Pastureland only covers 4 percent of the total area, although both forestland and rocky areas with sparse vegetation cover (the last one covering 21.5 percent of the three landscapes) also represent important habitats for livestock grazing.

Table 1. Land use/Land cover types in the target landscapes

Landscape	Artificial Areas	Agriculture land	Forestland & other wooded areas	Pastureland	Degraded/Rocky areas with sparse vegetation	Wetlands	Other water bodies	Rivers	Total
West Beqaa	1.364,09	10.178,96	2.665,00	293,11	1.830,18	183,12	13,12	52,78	**16.699,68**
Rashaya	597,21	2.586,32	3.088,10	664,48	4.667,15	-	-	-	**11.623,40**
Chouf	1.224,86	2.285,36	6.874,80	767,60	2.546,12	-	4,53	37,51	**13.774,32**
Total	**3.186,16**	**15.050,64**	**12.627,90**	**1.725,18**	**9.043,44**	**183,12**	**17,65**	**90,29**	**42.097,40**

15. Forest: forest cover and other wooded land extends to around 23 percent of the country area. More than half the Lebanese forests (61 percent) and the majority of other wooded land (OWL) (86 percent) are privately owned[17]. While Lebanon's forest laws include recommendations on managing forests, both public and private owners lack the financial, technical, planification and governance means to carry out sustainable and benefit-sharing forest management.

[17] World Bank. 2023. Lebanon Forest Note: Supporting Sustainable Forest Management for Forest Fire Risk Reduction. The World Bank, Washington D.C

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16. The diversity of forest types is high and linked to the different type of substrates and bioclimatic types along the altitudinal gradient: evergreen broadleaf (e.g. *Ceratonia siliqua Quercus calliprinos*), conifer (e.g. *Pinus halepensis, P. brutia*) and mixed forests of the Thermo-mediterranean bioclimate type at lower elevations; mixed deciduous and evergreen broadleaf (e.g. Quercus infectoria, Q. calliprinos, Carpinus orientalis) and pine forests (Pinus pinea, P. brutia) of Meso-mediterranean and surpa-mediterranean bioclimate types at mid elevations, and conifer (Cedrus libani, Abies cilicica, Junierus excelsa) and broadleaf deciduous forests (e.g. Quercus brantii look) of the Mountain- and Oro-mediterranean bioclimate types at higher altitudes[18].

17. Forests ecosystems in Lebanon are multifunctional and play a significant role in the provision of critical goods and services (e.g. food provision such as pine nuts, fruits, bee products, wild herbs and aromatic shrubs; carbon sequestration; watershed protection and water regulation; soil nutrients cycle; pollination and pest-control; tourism and recreation) on which development sectors such as agriculture production, water and energy, and local livelihoods depend. According to the Lebanon's National Forest Program (NFP) 2015–2025, the total value of forest products and services under a sustainable management scenario may reach USD 181,274 million equal to USD 587 per ha. For instance, honey production is estimated at 1,620 tons per year, with a total estimated value of USD 32 million, of which USD 23 million is attributed to forests and shrubland honey[19]; Syrian oregano annual collection volume is estimated to be around 1,000 tons and 1 kilogram of the product is valued between USD 5.6 and USD 30, depending on quality[20].

18. As has already been mentioned in the previous section, Lebanon's forests are threatened by (i) abandonment problems (very dense secondary pine and oak forests, which have colonized abandoned pastures and agricultural lands, with high water stress and accumulation of dry biomass that increase the risk of dieback and wildfire spread), (ii) problems of uncontrolled, unregulated or poorly regulated overuses (collection of firewood and NTFPs and grazing pressure), and (iii) problems of uncontrolled increase in the forest-urban/industrial interface (increased risk of fire ignition, erosion and contamination of water and soil).

19. Special consideration must be given to wildfires which pose a major growing threat to forests in Lebanon. Increased risk of devastating wildfires that are difficult to control is due to a concatenation of interacting factors: (i) the excessive accumulation of fuelwood in the landscape with high fire spread risk, (ii) the growing wildland-urban interface and uses with high risk of ignition, and (iii) the climate change induced increase in the frequency and intensity of heat waves, strong winds and low relative humidity over a broader annual period that already extends from April to November[21].

Every year, one percent of Lebanon's forests are affected by fires (average frequency of 177 forest fires per year, affecting around 1,500 ha of forestland), driving forest degradation and loss[22].

20. The target landscapes include a total surface of 12,628 hectares of forestland, from which 54.4 percent in the Shouf landscape, 21.1 percent in the West Beqaa landscape, and 24.5 percent in the Rashaya landscape. Except for the *Cedrus libani* and *Quercus brantii look* forests that are only found in the core zone of the SBR with strict protection, the forest types that predominate in the project intervention areas are oak forests (*Quercus calliprinos* and *Quercus infectoria*) with a total surface of 5,975 hectares, mixed pine, and oak forests with a total surface of 968 hectares, and pine forests with a total surface of 829 hectares. Additionally, 4,453 hectares of serial forest vegetation are dominated by different shrubland types.

21.

Table 2. Forest types in the target landscapes[23]

Landscape	Dense pines	Open pines	Dense broadleaf	Open broadleaf	Dense mixed forests	Open mixed forests	Dense cedars	Open cedars	Open cypress	Shrubland	Shrubland with scattered trees	Total
Shouf	295,6	487,3	553,9	1765,8	452,8	508,6	333,8	53,7	0	377,7	2045,6	**6874,8**
West Beqaa	2,5	42,9	142,1	1477,5	0	6	0	0	6,4	462,9	524,7	**2665**

[18] Regato, P. 2020. Forest and Landscape Restoration Guidelines: Regaining Landscape Resilience, Ecological Functionality and Human Well- being. The Shouf Biosphere Reserve. Hani, N., M. Pagliani & P. Regato Editors. Lebanon.

[19] USAID (United States Agency for International Development). 2013. Honey Value Chain Assessment. Final Report, Washington, DC.

[20] AFDC (Association for Forests Development and Conservation). 2019. State of Lebanon's Forests. Jdeideh, AFDC.

[21] Pedro Regato, Lilian Car, Enes Drešković, Christina Georgatou, Dany Ghosn, Ranko Kankaraš, Alessio Martinoli, Aleksander Mijović, Ilektra Remoundou, Aline Salvaudon, Azra Vuković (2023). Building fire-smart landscapes in the Mediterranean region: abridged version. Project "MediterRE3 (REstoring REsilience of Mediterranean landscapes to REduce GHG emissions from wildfires)". Istituto Oikos ETS (Milan, Italy), Parc naturel régional du Luberon (Apt, France), Green Home (Podgorica, Montenegro), CIHEAM-MAICh (Chanià, Greece).

[22] World Bank. 2023. Lebanon Forest Note: Supporting Sustainable Forest Management for Forest Fire Risk Reduction. The World Bank: Washington D.C.

[23] Based on CNRS Lebanon, 2017

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Rashaya	0	0,2	0	2045,7	0	0	0	0	0	794,5	247,7	**3088,1**
Total	298,1	530,4	696	5289	452,8	514,6	333,8	53,7	6,4	1635,1	2818	**12627,9**

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22. Forests in the target landscapes provide numerous ecosystem services, whose economic value has been quantified[24] and which are being restored and enhanced with the support of ACS (the SBR management organization) within the framework of several projects. Different pilot interventions[25] in collaboration with private owners, forest users and municipalities on forest landscape restoration, the integrated management and use of oak and pine forest biomass and agriculture waste, the sustainable harvesting in the wild and production of NTFPs in agricultural terraces, agrifood processing and marketing, and ecotourism services, among others, have contributed to reducing pressures on forest ecosystems while enhancing forest resilience, improving governance and increasing local livelihood opportunities. Likewise, the organizations that manage the Shouf Biosphere Reserve and Mount Hermon Reserve are currently reviewing their management plans (scheduled for completion by the end of 2024) establishing protocols for the conservation and sustainable use of natural resources, and have trained and equipped the personnel (guards and experts) to carry out prevention (e.g. information and awareness of users of the territory; replacement of a good part of wild collection by agricultural production of NTFP and fodder) and effective control (surveillance with rapid detection, elimination and punishment of illegal actions).

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23. Non-timber forest products have a very high ecocultural value in Lebanon, often linked to eco-agro- tourism, contributing to employment, local business development, food security and the diversification of revenues of rural families, with a growing diversified market of high quality organic and fair-trade products. Recently FAO[26], UNDP[27], USAID[28], IUCN[29], and other partners have carried out analyzes of NTFP value chains such as honey, pine nuts, oregano, gundelia, sumac, wild fruits and other medicinal and aromatic plants, reporting on their actors, governance, cost analysis, profit, productions, qualities, and diversified markets. A very moderate estimate (it does not quantify all goods and services) of the economic value of ecosystem services provided by the Shouf Reserve[30], made ten years ago, indicates an economic value of 1.2 million for the sale of NTFPs and other products linked to local varieties traditional commercial species, which reaches 2 million if we include the eco-agro-tourism services of the reserve. Currently, a review of the economic valuation of ecosystem services is being carried out, which is estimated to be multiplied at least three times.

24. Agriculture: according to World Bank estimates[31], the contribution of the agriculture, forestry, and fishing sectors to the country's economy has been declining since 1990. In 2021, the agriculture sector generated 2.76 percent of Lebanon's gross domestic product, while in 2018 it was 3.2 percent[32]. Lebanon imports 55 percent of its domestic food supply, being almost entirely dependent on imports of cereals (83 of consumption needs in 2018), and entirely dependent on imports for pulses[33]. In the case of dairy products, tubers, fresh vegetables, fruits, oils, meat, fish, and eggs, imports represent less than 50. The economic crisis and subsequent currency depreciation of the Lebanese Pound have put a strain on the country's capacity to secure hard currency to pay for its food imports, which in 2021 decreased 38 compared to 2019.

25. Even though agricultural areas cover around 65 of the Lebanese land (6,800 km2), the cultivated area only amounts to approximately 27.5 (2,750 km2), out of which half is irrigated[34]. Large areas on the Shouf district consist of abandoned agriculture terraces that, in many cases were colonized by secondary pine and oak forests.

26. The agriculture surface in the target landscapes covers 14,850 hectares in total, 68 percent of which is in the West Beqaa. The agriculture landscape varies significantly: the Shouf landscape is characterized by traditional dry stone wall agriculture terraces with olives (957 ha) and fruit trees (753 ha) both under rainfed (mainly olives) and irrigation production and other small non-terraced farmland plots with herbaceous and woody crops (366 ha); the West Beqaa landscape is dominated by flatland areas with large to medium field crops (cereals, tubers, vegetables, forage, pulses) within a large irrigation perimeter (8,053 ha), vineyards (1,183 ha) and fruit trees (660 ha); the Rashaya landscape is dominated by rainfed production systems in flatland areas with 1,828 hectares of large to medium field crops (cereals and pulses), 271 hectares of olive crops, and 220 hectares of fruit tree crops. In total, 195 hectares of agriculture land is abandoned in the three landscapes (excluding long-abandoned agricultural areas that have already become secondary forests and bushes).

[24] Ecodit. 2015. Economic value of the Shouf Biosphere Reserve. Critical Ecosystem Partnership & IUCN.

[25] ACS/Istituto Oikos STONE Project; Mediterranean Mosaics international project (Lebanon/SBR & Italy) and the international project Promoting Sustainable Land Use Practices in Mediterranean Cultural Landscapes (Lebanon/SBR, Spain, Morocco, Greece).

[26] Hamade, K. 2016. Non-wood forest products value chains in Lebanon. FAO

[27] UNDP. 2018. Zaatar in lebanon value chain assessment and analysis.

[28] USAID/Lebanon. 2017. Lebanon industry value chain development (LIVCD) project - honey value chain impact assessment

[29] Sleem, K., Redwan, Z. and Assi, M.B. (2020). ***Value chains in Lebanon's Shouf Biosphere Reserve***. Cultural landscapes and biodiversity in the Mediterranean Basin. Washington, DC: IUCN.

[30] Ecodit. 2015. Economic value of the Shouf Biosphere Reserve. Critical Ecosystem Partnership & IUCN.

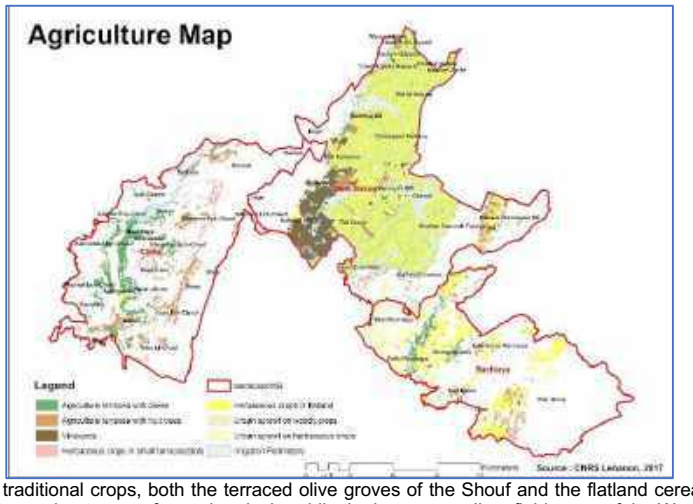
[31] https://www.worldbank.org/en/country/lebanon/overview

[32] Lebanon country profile - laws, policy, and regulations affecting the water-energy-food nexus. 2023. Water & Energy for Food, German Coop, EU, Gov. Netherlands, Norad, USAID.

[33] WFP Lebanon Research, Assessment & Monitoring Unit. 2022. Food Security and Vulnerability Analysis of Lebanese Residents. WFP.

[34] Farajalla N. et al. 2022. Climate change, agriculture, & livelihoods in Lebanon: Consolidated livelihoods exercise for analyzing resilience. WFP & AUB.

Figure 3. Agriculture land uses in the target landscapes (CNRS/Lebanon, 2017)



27. Farmers with traditional crops, both the terraced olive groves of the Shouf and the flatland cereal/legume crops of Rashaya, make moderate use of agrochemicals, while the large to medium field crops of the West Beqaa floodplain and the fruit tree crops (mainly apple trees and peaches) in the Shouf and West Beqa are intensively irrigated with broad use of synthetic agrochemicals causing soil and water pollution, one of the main causes of the intense pollution of the Litani River.

Further, in Central Bekaa, farmers are forced to use contaminated water to recompense water shortage during the peak crop demands, to the detriment of soil and groundwater quality[35].

Table 3. Agriculture land use types in the target landscapes[36]

Landscape	Medium to large field crops	Small field crops	Abandoned Agriculture Land	Olives	Vineyards	Fruit trees	Total
West Beqaa	8,052.48	96.09	25.43	53.58	1,182.96	660.63	10,071.17
Chouf	61.61	365.56	133.09	956.49	-	752.91	2,269.67
Rachiaya	1,828.23	96.74	36.83	270.75	56.68	219.88	2,509.11
Total	**9,942.31**	**558.39**	**195.35**	**1,280.82**	**1,239.64**	**1,633.42**	**14,849.94**

28. The small field crops of less than 1 hectare (up to 5 hectares in the flatland area of the West Beqaa) cover an area of 558 hectares. Moreover, the majority of the 1,280 hectares of olive crops and at least half of the 1,633 hectares of fruit tree crops, namely the terraced crops of olive and fruit trees in the three landscapes (especially frequent in the Shouf[37]), are small properties too.

29. According to the 2010 census there are around 4,000 smallholder farmers who own agricultural farms in the target landscapes. The last census carried out is old, so this number may have varied in the last 14 years, especially if we include Syrian refugees and possible migrants to/from urban areas.

[35] https://www.researchgate.net/publication/228433166

[36] Based on CNRS Lebanon, 2017.

[37] The Shouf land tenure data was not available at the time of writing the project proposal.

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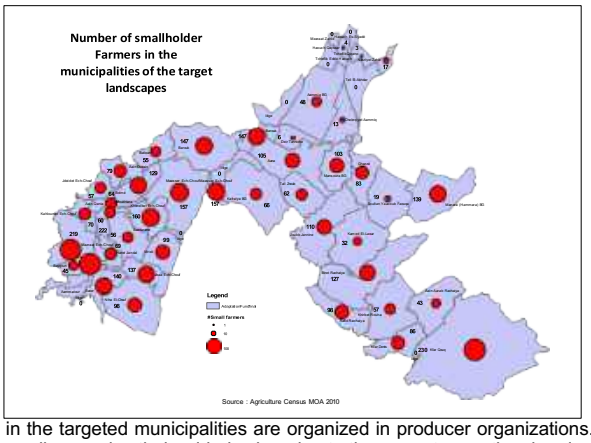
Figure 4. Smallholder farmers in the target landscapes[38]



30. Part of the farmers in the targeted municipalities are organized in producer organizations. However, many of their members do not generally perceive their added value, due to the current operational and self-financing problems, as well as the absence of hired personnel. In recent years, several cooperatives have been formed, especially by women, involved in the processing and marketing of a large number of by-products derived from non-timber forest products (e.g. honey, oregano, pine nuts, sumac, rose water) and from local crop species and varieties.

31. Producers and processors follow various marketing mechanisms, including direct sales in local markets and the markets of Saida and Beirut, sales to intermediaries, sales agreements with the SBR and with Souk El Tayeb enterprise, agreements with restaurants and tourist establishments, and online sales (including through WhatsApp), among others. However, marketing remains a key challenge for most producers, because of the lack of inter-producer organization, means of transportation, and marketing support, as stated by the producers consulted during the design of the project. Studies on the different value chain actors in the target area, production systems, and business opportunities are available within the framework of several FAO countrywide and ACS initiatives in the SBR. These initiatives were aimed to support the vulnerable populations (young unemployed, adult men and women and pensioners with economic and food insecurity) through therestoration of abandoned agricultural terraces with a diversity of non-timber forest crops (aromatic plants, stone pine), local varieties of fruit trees, and cereal/legume cover crops[39].

32. Livestock, mainly goats in the rugged reliefs and sheep in the valleys, has increase in the northern part of the West Beqaa due to Syrian refugees. Livestock management follows a poorly organized short-distance transhumance system, depending fundamentally on the woody fodder of forests, shrubland and wooded pastures in the case of goats, and on the pastureland and agriculture stubble of the Beqaa valley in the case of sheep and goat. There are also dairy cows, but they are scarcer and are stabled. The improper solid waste disposal from livestock also causes major pollution problems in the Litani river basin of the West Beqaa region.

33. A major obstacle for sustainable agricultural practices across Lebanon remains linked to land tenure. The majority of farmers work on very small parcels - 75 of them operate on less than 1 ha of useful agricultural surface and 95 on less than 4 ha - making it difficult to implement comprehensive and unified soil management plans for a given geographic zone[40]. Women constitute around 35 of the total agricultural labour force, mainly an informal role as part of the family-related labour[41]. Women are most highly involved in the production and processing levels of the value chains, with limited access to technology and very marginal roles in marketing. There are around 1,245 agri-food companies constituting the largest share of total industrial firms in Lebanon, with 48 located in Mount Lebanon Governorate. Enterprises led by women have developed less favourably than those led by men, tend to be very small, experience tougher competition than men's businesses, and achieve profitability only two-thirds that of men. Women make very little use of business support services and have more difficulty with taxes and tax administration, and with customs duties.

34. The economic crisis and depreciation of the Lebanese pound means that farmers have less purchasing power and access to inputs and equipment. This is especially exacerbated by the fact that most of the farmers production costs are in US dollars, while their revenues are in Lebanese pounds[42]. A 2021 report by the Lebanese Centre for Research and Agriculture Studies found that the value of vegetable and fruits agriculture crop production suffered a 33 percent

[38] 2010 Agriculture census, MoA.

[39] (i) Hamade, K. 2016. Non-wood forest product value chains in Lebanon. FAO; (ii) Sleem, K., Redwan, Z. and Assi, M.B. (2020). Value chains in Lebanon's Shouf Biosphere Reserve. Cultural landscapes and biodiversity in the Mediterranean Basin. Washington, DC: IUCN.

[40] chapter viii assessment of the status of soil resources in Lebanon (researchgate.net)

[41] ILO and FAO. 2020. Skills Development for Inclusive Growth in the Lebanese Agriculture Sector - Policy Brief. Beirut. https://doi.org/10.4060/cb2457en

[42] WFP Lebanon Research, Assessment & Monitoring Unit. 2022. Food Security and Vulnerability Analysis of Lebanese Residents. WFP.

decrease and the value of animal production a 14 percent decrease compared to the 2019 value of USD 1.1 billion[43].

35. Microcredit institutions in Lebanon provide micro and small loans for start-ups, employees and micro-entrepreneurs. These institutions aim at improving the social, cultural, economic, health and livelihoods of rural Lebanese by providing, in addition to financing, various types of assistance. In the Shouf Biosphere Reserve, the Al-Shouf Cedar Society (ACS) has established in 2013 the Cedar Loan funding program that until today served 198 beneficiaries, adapting to the current financial crisis, and targeting actions related to rural development such as land restoration and post-harvest activities.

36. Energy: there is only marginal wood (timber) production in Lebanon and the related industry is small and often not profitable[44]. If sustainably produced, fuelwood in Lebanon have significant positive implications for vulnerable rural population. Fuelwood resources may result from forest thinning and pruning operations (harvesting residues and small diameter wood), and agriculture waste (olive and fruit tree pruning remains and olive pomace). It is estimated that using fuelwood for heating in rural areas would save USD 425 for each ton of imported fuel oil[45]. The pilot initiative on briquettes production from forest and agricultural pruning remains and olive pomace that was implemented by ACS in the framework of the Mediterranean Mosaics project, estimated that the same lower calorific value (LCV) costed 2.8 to 2.5 more times with diesel, 1.7 to 1.5 more times with olive wood and 1.8 to 1.56 more times with oak wood, demonstrating the competitiveness of briquettes compared with other fuels[46].

Table 4. Comparison on lower calorific value (LCV) and price of briquettes with alternative fuels[47]

Fuel	Price/weight (USD/tonne)	LCV/weight (kWh/tonne)	LCV/price (kWh/USD)
Briquettes	175-200	4 650	23.3-26.6
Olive wood	300	3 720	12.4
Oak wood	312	3 100	9.9
Diesel	-	-	9.3

37. The consumption of fuelwood for heating and cooking is quite common in the mountainous areas of Lebanon. Recent research indicated that almost 20 percent of mountain village residences consume around 190 tons of wood per year[48]. Rural households in the target landscapes depend on diesel and firewood for cooking and heating. Diesel is a very common heating system adapted to the most widespread type of stove and is very polluting also causing important health problems when used in closed rooms. The economic crisis has made diesel inaccessible and very expensive, which has increased pressure on woodlands country wide. To reduce the energy cost for vulnerable population, reduce the risk of fires, reduce air and in-house pollution, and improve the health, maturity and biodiversity of forest ecosystems, ACS began pilot actions for sustainable and integrated management of forest and agricultural biomass in the SBR.

38. Lebanon is promoting the use of renewable energy sources to diversify its energy mix and reduce dependence on fossil fuels. The National Renewable Energy Action Plan (NREAP 2016-2020[49]) has a target of 21 percent renewable energy sources from bioenergy, namely biomass. The 2020 Nationally Determined Contribution (NDC) report for Lebanon includes the "*unconditional target*" to generate 15 of the power and heat demand in 2030 by renewable energy sources. The report also includes as a key activity of the Adaptation Priority 3 (Structure and develop sustainable water services, including irrigation, in order to improve people's living conditions) to encourage and support the use of renewable energy in agricultural irrigation and in drinking water supply. Despite a growing interest and decrease in the cost of the technology, the adoption of solar photovoltaic systems remains limited[50].

39. Water: the agriculture sector in Lebanon uses almost 60 percent of water withdrawals, municipalities use 29 percent

[43] 2021 Lebanese Centre for Research and Agricultural Studies (CREAL) study "Diagnosing the situation of Lebanese agriculture, in light of the current financial and economic crisis, immediate solutions and a future vision".

[44] World Bank. 2023. Lebanon Forest Note: Supporting Sustainable Forest Management for Forest Fire Risk Reduction. The World Bank: Washington D.C.

[45] Stephan, J. 2013. "Socioeconomic Impact Assessment." In Safeguarding and Restoring Lebanon's Woodland Resources. Project.

[46] Regato P, Pagliani M & Hani N. 2020. Briquette production within the adaptive Forest Landscape Restoration plan in the Shouf Biosphere Reserve, Lebanon. In: Global Bioenergy Partnership. Working together for Sustainable Development: Positive Relationships between Sustainable Wood Energy and Forest Landscape Restoration.

[47] Ibid.

[48] Saad, S., M. Ghandour, M. Brouche, and A. Mourtada. 2020. "Establishment of a Sustainable Energy Action Plan: Case Study of a Municipality in Lebanon." 5th International Conference on Renewable Energies for Developing Countries (REDEC): 1-6.

[49] The new action plan for 2020-2025 has not yet beeng prepared.

[50] https://www.irena.org/-/media/Files/IRENA/Agency/Publication/2020/Jun/IRENA_Outlook_Lebanon_2020.pdf

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meanwhile industry use 11 percent. Lebanon is ranked as having extremely high baseline water stress[51], and projected climate change expects an increase in water shortages. This problem is only expected to get worse, with mountain snow cover projected to decrease by 40–70 percent by 2050, which will impact vital water sources and lead to further water scarcity[52]. Water deficits are especially acute in the Beqaa Valley, where potential evapotranspiration exceeds 70 percent of precipitation. Key additional challenges include outdated and insufficient infrastructure, poorly managed water utilities, limited water storage, poor irrigation efficiency and mounting pressures on ground and surface water supplies[53].

40. Governmental wells supply water establishments throughout the target landscapes with drinking water. On top of that, private wells (mostly illegal) that serve only a portion of the population are used for potable water and agriculture. Strict policies for groundwater abstractions have been initiated since 2015 and private groundwater extractions are meant to be reduced by 6 percent per year until 2024, with increasing reliance on public wells[54]. The project area also contains a lot of springs and some of those are tapped either by water utilities or by residents with the general perception that spring water is better than network water. Furthermore, there are several water reservoirs mainly located in the Shouf and West Beqaa landscapes that supply water for wildfire fighting, reforestation and agriculture.

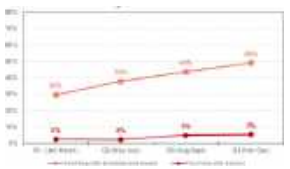
41. The Litani River Basin is the most significant freshwater system in Lebanon, but its role in water supply is compromised by poor water management and high pollution levels[55]. While the main sources of pollution are largely common - domestic wastewater and solid waste; point sources from industrial, healthcare, touristic establishments, quarries; and non-point agricultural runoff -, their relative contribution is river-specific and tightly associated with the dominant land uses within the watershed.

Socio-economic Profile

42. In absolute terms, with over 625,000 people estimated as moderately or severely vulnerable, Mount Lebanon was the governorate with the highest number of deprived Lebanese despite the lowest incidence of moderate and severe household deprivation score (HDS), which is a combination of 13 indicators on education, health, food, housing, and income[56]. By the end of 2021, the population with moderate to severe HDS in the districts where the project area is located (Shouf-West Beqaa- Mount Hermon corridor) was as follows: 44 percent of the population (91,500 people) in the Shouf district, 60 percent (41,000 people) in the West Beqaa, and 49 percent (15,500 people) in Rashaya[57]. By the end of the year food insecure households were 49 percent in the Beqaa region and 34 percent in Mount Lebanon. Between January and December 2021, the share of households employing livelihood strategies that hinder their capacity to generate income, making them more vulnerable to future shocks (emergency or crisis type mechanisms), increased from 67 percent to 76 percent. Annex 2.2. provides more detailed information on the socio-economic characteristics of the three districts - Shouf, West Beqaa and Rashaya - where the target landscapes are located.

Figure 5. Food insecurity and social assistance needs based on Household Deprivation Score[58]

Beqaa-Rashaya



Mount Lebanon

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51 https://www.wri.org/insights/17-countries-home-one-quarter-worlds-population-face-extremely-high-water-stress

52 UNDP (2021). Climate-Proofing Lebanon's Development Plans. Beirut, Lebanon.

53 https://pdf.usaid.gov/pdf_docs/pbaah788.pdf

54 Antea Group. 2016. Groundwater resources assessment chouf area - lebanon. *Nestlé Waters Lebanon and Shouf Biosphere Reserve*.

55 FAO and IHE Delft. 2019. Water Accounting in the Litani River Basin – Remote sensing for water productivity. Water accounting series. Rome.

56 World Food Program. 2022. Food Security and Vulnerability Analysis of Lebanese Residents. WFP Lebanon.

57 Ibid.

58 WFP Lebanon Research, Assessment & Monitoring Unit. 2022. Food Security and Vulnerability Analysis of Lebanese Residents. WFP

43. In 2021 households' main income source was wage employment, followed by temporary employment and daily labour. Remittances from abroad were the main income source for 3 percent of the Lebanese[59]. Households primarily engaged in agriculture were 3 percent in Mount Lebanon and exceeded 5 percent in the Beqaa region. Nearly 17 percent of the population reported to have received social assistance, a number that reached 24 percent in the case of households headed by women. The unemployment rate was 18 percent among men, and 43 percent among women (70 percent for women aged 18 to 24).

44. Lebanon hosts the highest number of displaced persons per capita and per square kilometre in the world, with an estimated 1.5 million Syrians who have fled the conflict in Syria, along with 180,000 Palestine Refugees in Lebanon (PRL)[60]. Lebanon constitutes a unique case as a host country, further facing the devastating impact of the unprecedented economic, financial, social and health crises of the last few years. Since 2015, Lebanon has received over USD 9.3 billion in support for displaced Syrians, vulnerable Lebanese, Palestinian refugees, and public institutions under the Lebanon Crisis Response Plan[61]. Relationships between hosting communities and refugees are deteriorating at all levels due to the enormous impact of the sustained economic deterioration on the vulnerable Lebanese population who perceive how aid to refugees unfairly exceeds their income, as well as the worsening of physical safety and insecurity.

Gender issues

45. Lebanon has ratified several important international agreements including the Convention on the Elimination of All Forms of Discrimination Against Women (CEDAW) and the Convention on the Rights of the Child (CRC). In 2014 Lebanon passed the Law 293 on the Protection of Women and Family Members from Domestic Violence, but, in the case of disputes, the final judgment and enforcement of the law is in the hands of judges in religious courts who have wide discretion over its interpretation and what constitutes domestic violence. In 2020, Lebanon's Parliament passed Law 205, a landmark law criminalizing sexual harassment that represents a critical first step in expanding access to justice for survivors of sexual and gender-based violence. The 1946 Labour Law protects and guarantees labourers' rights regardless of gender, however the vast segment of informal workers, such as women domestic workers and women and men working in the agricultural sector, are not covered by the law. Article 26 of the Labour Law was amended in 2000, prohibiting discrimination against women in the type of work and amount of wage or salary, but enforcement is non-existent.

46. Lebanon has one of the highest overall gender gaps in the world, ranking 119th out of 149 countries in the 2022 World Economic Forum Global Gender Gap report[62]. Most policies and strategies related to climate change and included in Lebanon's NDC do not thoroughly address gender dimensions. Gender integration seems more advanced in the agriculture and forestry sectors, while the biodiversity, energy and water sectors' policies have very limited gender considerations. Men and women, households, and communities face differentiated impacts from climate change based on their level of vulnerability, preparation, and resilience to climate hazards[63]. In agriculture systems, women undertake a significant proportion of agricultural work, heavily involved in harvesting, weeding and post-harvesting tasks and decisions, whereas men are responsible for pest control and fertilization[64].

47. Sixty-three percent of women work in the service industry, which includes banking, education, health, tourism, trade, and social work. Women also have an easier time finding positions in the public sector (e.g. almost 70 percent of teachers in Lebanon's public schools are women). Regarding education, men and women have similar average years of schooling, 8.5 percent for women and 8.9 percent for men. Women in Lebanon still do not have enough knowledge of the in- depth use of the social media tools.

48. Women in rural areas make up 43 percent of the agricultural workforce, mainly an informal role as part of the family-related labor. Women in different agriculture value chains are highly involved at the production and processing levels, with very marginal roles in marketing through the women cooperatives. They have limited access to technology mainly because they carry out activities as dictated by superiors, such as planting or harvesting manually, in a traditional way, without the use of technology. In 2010, only 9 percent of farms were headed and managed by women and only 5 percent of the total agricultural area was cultivated by women. Women represent only 7 percent of the agriculture land holders taking decisions over resources and managing agricultural holdings. Approximately 31 percent of informal workers are women including those working in the agricultural and service sectors as well as those working in family enterprises. Lebanese women's participation in entrepreneurship is only 16 percent, because women are more likely to be employed than self- employed. The access to market information is low in all governorates with only 6 percent of female holders benefitting from market information.

49. Women are on the forefront of resource management, responsible for domestic aspects of energy, water and waste management, and have a key role to play in Disaster Risk Reduction (DRR). Their central role in maintaining social relations within their family and community provides them with the opportunity to influence others, which importantly includes increasing awareness around behaviors and actions that contribute to climate change mitigation and adaptation. While all sectors that will be affected by climate change will have some impact on women, Lebanon has prioritized the energy, waste and water, sectors to undertake capacity building and gender mainstreaming to better support gender-sensitive climate action. The lower access to production equipment and inputs, training, technical

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[59] WFP Lebanon Research, Assessment & Monitoring Unit. 2022. Food Security and Vulnerability Analysis of Lebanese Residents. WFP.

[60] *The UN Relief and Works Agency (UNRWA) estimates a higher number of Palestine Refugees in Lebanon in their 2023 Emergency Appeal. The LCRP planning figure is based on the census conducted by the Government's Lebanese-Palestinian Dialogue Committee (LPDC), as agreed with the Government of Lebanon.*

[61] Lebanon Crisis Response Plan 2023.

[62] http://reports.weforum.org/globalgender-gap-report-2022

[63] UNDP. 2021. Lebanon gender analysis. executive summary.

[64] FAO. 2012. *Country Study on Status of Land Tenure, Planning and Management in Oriental Near East Countries: Case Study Lebanon.* FAO/SNO, Cairo, Egypt

support, finance, and information, makes women more vulnerable in time of climate change.

50. According to the Gender Analysis on Climate Change included in the NDC Support Program, the main challenges in mainstreaming gender into climate change policies and actions are: (i) cultural barriers to gender equality and women's participation in decision-making; (ii) difficulties in understanding the linkages between gender and climate change; (iii) lack of capacity-building on climate change in institutions; (iv) no dedicated budget for gender-related activities; and (v) lack of adequate data to perform informed policy-making on gender integration

3. Climate change

51. According to the latest Lebanese report to the UNCCD, 39 percent of the country's territory can be classified as having very high exposure to land degradation[65]. By 2050, with a projected global warming of up to 1.7 ºC, the combined effect of human-induced land degradation and climate change could reduce crop yields by 10 percent globally and by up to 50 percent in certain regions, and significantly increase the likelihood of wildfires, pest and disease outbreaks in scenarios where droughts and heat waves are projected to be more frequent[66].

52. According to the Second Biennial Update Report submitted to the UNFCCC in 2017, Lebanon's forest sector contributed 3.9 percent (0.78 million tons) of the country's total GHG emissions in 201. If effectively managed, can play a significant role in carbon sequestration and storage: they are estimated to remove 1.9 million tons of carbon dioxide equivalent (CO2e) per year through photosynthesis and carbon storage. Yet, this potential is threatened by several factors such as climate change, unsustainable forest management practices, and other threats such as forest fires.

53. Climate change has substantially increased the occurrence of climate and weather extremes, including heat waves, heavy precipitation, floods and droughts, in Lebanon[67] (World Bank, 2018a). According to the 4th National Communication (4NC) to the UNFCCC[68], the following climate change impacts are recognized in Lebanon: (i) increase of 1.6°C of the annual mean temperature for the period 1950-2020 (steeper between 1991-2020); (ii) increase in annual mean temperatures from 14.22°C in 1901 to 15.83°C in 2020; (iii) decrease trend in precipitation of 0.53 mm per decade for the period 1950-2020, with strong fluctuations from year to year, less than 500 mm for years 1960- 61, 2001, 2010 and 2019 and around 900 mm for years 1968-1970, 1994 and 2004; (iv) increase in the extreme weather events' frequency since 2010, with three times the number of flood incidents in 2015 and increase in heatwave intensity in 2020.

54. The 4NC Projected Changes for 2050-2100 are:

55. Temperature: Intensive increase in temperature over a shorter timeframe with the Beqaa valley and coastal areas suffering the most: An increase in the average temperature of 1.6°C to 2.2°C when compared to the reference period 1986-2005, depending on the RCP scenario (4.5 or 8.5), is expected by mid-century according to most recent projections (2022), and an increase of 2.2°C to 4.9°C for the end-century. The increase is seasonally dependent, being more pronounced in summer and autumn. In terms of the days with temperature above 35 ºC and 40°C, they are expected to almost double for the period 2041- 2060 compared to the reference period 1995-2014 with the increase being more pronounced in the case of summer, at both the coastal and inland regions of Lebanon.

56. Precipitation: A reduction in precipitation for Lebanon by 6.5 percent to 9 percent by mid-century, and by 9 percent to 22 percent by the end of the 21st century is reported. The largest reductions are estimated inland, at areas adjacent to the Lebanon Mountains, which can adversely impact groundwater aquifers dependent on snowfall.

57.

Figure 6. Annual rainfall anomaly in Lebanon compared to the mean annual total rainfall for the period 1976- 2005 (ICBA, 2017)[69]

Figure 7. Mean change in precipitation (mm/month) for near-term (2021-2040) and mid-term (2041-2060) for an ensemble of six SSP-8.5 projections compared to the reference period (1995-2014)[70]

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[65] Final National Report on Land Degradation Neutrality Target Setting Programme LEBANON - February 2018.

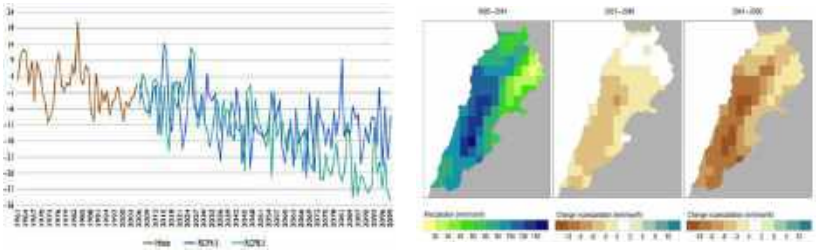
[66] Ibid.

[67] Verner D. et al. 2018. droughts and agriculture in Lebanon: causes, consequences, and risk management. The WB.

[68] MoE/UNDP/GEF (2022). Lebanon's Fourth National Communication to the UNFCCC. Beirut, Lebanon.

[69] The brown line is the model's average for the historic period, the dark blue line is the model's average for RCP4.5 and the light green line is the model's average for RCP8.5.

[70] MoE/UNDP/GEF (2022). Lebanon's Fourth National Communication to the UNFCCC. Beirut, Lebanon.



58. Reduced precipitation (both snow and rain) is likely to increase the incidence of drought, while higher temperatures will amplify the effects of drought[71]. A reduction in water supply and crop yields because of climate change will significantly impact the gross domestic product of the country, with an estimated reduction of 1.9 percent by 2050.

59. Based on the data reported by WFP in 202072, in zones with an agricultural land density below 15% (Shouf region), and between 16-49 percent (West Beqaa and Rashaya regions), changes in chilling hours, temperature, and precipitation by 2050 will have a high impact on agriculture production. The Beqaa region where more than 53 percent of the labour force works in agriculture, would be able to mitigate the impact of precipitation decreases, mainly because the zone is fed by irrigation schemes, but the excessive levels of pollution in the water reserves of the Litani River prevent its use for agriculture and the groundwater resources, on which farmers depend, will be reduced by lower precipitation recharge.

60. Heatwaves: an increase from 2-3 events per year for the period 2017-2023 to 4 to 5 events in 2050 is predicted, with a strong increase in their intensity. Regarding the Heat Stress Duration Index (HSDI), the country will experience an increase from 70 days per year in the current period (2006- 2015) where temperatures are above 24.6°C for three consecutive days to almost 90 days, and from 5 days where temperatures are above 29.1°C to more than 20 days in the 2°C warmer climate scenario. Results from the combined analysis of Extreme Heat Factor (EHF) for heatwaves and Standardized Precipitation Index (SPI) for meteorological drought, show a dramatic increase of the number of days in Lebanon (especially at the north part and the inland region) when both threshold criteria are satisfied in terms of compound events of heat waves and drought.

Figure 8. Hot and dry conditions for the mid-term period (2041-2060) in events per year, compared to the reference period[73]

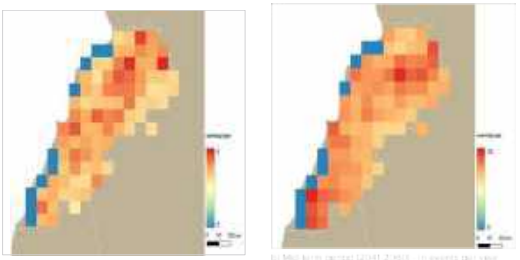


Fig. 9. Impact of changes in chilling hours, temperature, and precipitation on agricultural activities by 2050[74]

61. **Climate change impacts on forests**:

62. Forest fires: Researchers found that the occurrence of fire correlated positively with deviations in mean monthly temperatures, and negatively with deviations in mean monthly precipitation and mean monthly wind speed[75]. In

[71] https://www.climatelinks.org/sites/default/files/asset/document/2016_USAID_Climate%20Risk%20Profile_Lebanon_2.pdf

[72] 20220426_lebanon_clear_study_climate_change_and_livelihoods.pdf (aub.edu.lb)

[73] MoE/UNDP/GEF (2022). Lebanon's Fourth National Communication to the UNFCCC. Beirut, Lebanon.

[74] Farajalla, N. et al. 2022. Climate change, agriculture, and livelihoods in Lebanon: consolidated livelihoods exercise for analtzing resilience. WFP/AUB

[75] Salloum, L. and G. Mitri. 2014. "Assessment of the Temporal Pattern of Fire Activity and Weather Variability in Lebanon. International Journal of Wildland Fire 23(4): 503-509.

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addition, an increased probability of fire outbreaks correlates with high mean temperatures and long dry seasons. The predicted increase in temperature and the expected decline in precipitation are expected to result in higher fire frequency, especially if rigorous forest fire risk reduction measures are not implemented according to national strategies and action plans.

63. Forest fires ravage areas and burn over 4,000 hectares of land throughout the fire season in Lebanon, with the Shouf district being one of the most affected ones[76]. The year 2019 witnessed one of the highest numbers of fires in Lebanon, burning 3,155 ha of forestland in one year[77]. The high accumulation of dry biomass in unmanaged secondary dense forests, together with the higher frequency and intensity of severe heat waves and drought events, significantly increases the risk of large-scale wildfires during the warm and dry part of the year, which is prolonging to the autumn months. The Shouf area, with a high forest density, will be severely impacted.

64. Climate change induced shift in niche distribution and habitat conditions: temperature and precipitation changes will result in bioclimatic shifts and species migration needs towards areas (e.g. higher altitudes, direction the slope faces, micro-climate landform modification) with optimal climate conditions. Forest plant species may need to change their distribution and geographical ranges by migrating to other areas that meet their growth needs. To do this, many vulnerable species will need assistance with ecological restoration actions due to the speed of climate change. Vulnerable species in the target landscapes include *Juniperus excelsa, Cedrus libani*, *Quercus* spp. as well as many wild relatives of crop plants such as *Pyrus syriaca, Prunus ursina, Pistacia palaestina, Crataegus* spp, among others. Some species such as *Pinus brutia* will be positively affected tanks to a very successful regeneration strategy favored by fire to expand rapidly in higher areas.

65. Pest outbreaks: Climate change has already increased pest and disease outbreaks, favoured by unhealthy forest conditions due to abandonment/poor management practices. The Western conifer seed bug (*Leptoglossus occidentalis*) that feeds on the *Pinus pinea* seeds has caused a cone production decline of 50 percent between 2012 and 2017, with a decline of the net revenue of pine nuts production from USD 35 million to USD 15 million. The gypsy moth (*Lymantria dispar*) is destroying *Quercus calliprinos* and *Quercus infectoria* forests in particular.

Figure 10. Wildfire risk map for Lebanon[78]

Figure 11. Projected changes by 2050 under B1 and A2 IPCC scenarios in the distribution range of native forest species in the Shouf Biosphere Reserve[79]

66. The updated NDC of 2021 prioritizes adaptation measures and actions that can enhance resilience in the forest sector[80], including among other issues:

[76] Final National Report on Land Degradation Neutrality Target Setting Programme LEBANON - February 2018.

[77] Mitri et al. (2019). State of Lebanon's Forests 2018 (Mitri, G., Ed). Association for Forests, Development and Conservation/Ministry of Agriculture/Ministry of Environment/Lebanon Reforestation Initiative/United Nations Development Programmed/Global Environment Facility, Beirut. Pp.166. Mitri, G., Boufakhreddine, S., Amidi, J., Azzam, C., Chnais, E., Bouazza, K., Mansour, S., and Asmar, F. (2019a).

[78] Right: Types of landscape in Lebanon where primary ignition of wildfires was recorded between 2003 and 2015 (Source: Faour, G., and C. Abdallah. 2018. Land Use/Cover Map of Lebanon 1:20,000).

[79] Regato, P. 2020. Forest and Landscape Restoration Guidelines: Regaining Landscape Resilience, Ecological Functionality and Human Well- being. The Shouf Biosphere Reserve. Hani, N., M. Pagliani & P. Regato Editors. Lebanon.

[80] Lebanon's 4th national communication (2022) on climate change. Republic of Lebanon, Ministry of Environment.

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- Mainstream biodiversity conservation and ecosystem management in policy making and legislation.
- Encourage private initiatives promoting forest protection and sustainable use of forest resources.
- Enhance the ability of species to move and migrate towards areas with favourable bioclimate conditions.
- Diversify habitat type, forest types and land use at landscape level.
- Identify vulnerable areas which may face extreme climate change events and adaptation options.
- Increase awareness on ecosystem services and climate change to key target groups.
- Prepare management plans for the most vulnerable ecosystems to climate change.
- Implement effective fire management strategies through forest management.
- Adopt an ecosystem/ community approach for reforestation activities.

67. **Climate change impacts on agriculture production**: Based on the exposure and sensitivity analysis undertaken by the 4th UNFCCC report, the potential impact of climate change on agriculture in Lebanon is projected to increase, in the absence of adaptation measures, from mid-century to end-century. In terms of highest potential impact, the Litani River valley in eastern Lebanon (Baalbek, Zahle, West Bekaa, Rachaya, and Hasbaya) and southeastern Akkar exhibit increased potential impact. Special attention needs to five hotspot areas which have the highest climate change vulnerability for the agriculture sector, among which the target region of Rachaya with ~2,600 ha of estimated hotspots including field crops, olives, fruit trees, and vineyards (limited irrigation capacity, high percentage of unemployment, and shortage of groundwater resources).

68. The direct economic loss from damage caused by climate change and/or related disaster to the Lebanese agricultural sector was estimated at USD 605 million in 2018. Cold waves have been identified as the most recurrent hazards that cause damage to animals with an estimated cost at around USD 11 million in 2018.

69. Projected temperature increases over the next 60 years will expose crops at every growth stage. For temperature, a 1°C rise leads to a 13 percent loss in wheat yields, whereas the combined effect of drought and heat can cause 18 percent and 28 percent yield losses for grain legumes (Verner et al. 2018). Heatwaves can also result in the burning of crops and fruits, including grapes, olive, melon, apples, and apricot and heat blisters can affect the summer vegetable season of watermelon, tomato and cucumber (Abdallah et al. 2018).

Figure 12. Vulnerability of crops to climate risks[81]

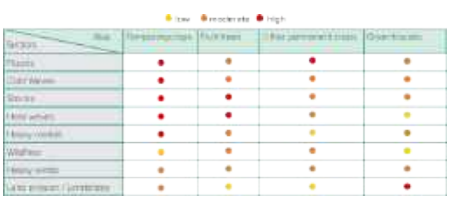
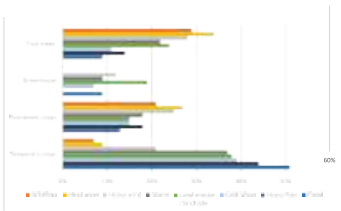


Figure 13. Disasters ranked by their damage to the agricultural sector[82]



70. Impacts of climate change to some key crops in the target landscapes are:

71. Olives: although olive trees can withstand long droughts and temperatures above 40°C, still, prolonged warmer or colder weather and wetter or drier conditions can have negative impacts on production. Spring frosts and warm winters adversely impact production as well as olive oil quality. Decreased rainfall also led to slight yield reductions especially when combined with reduced chilling. Olive production could become unfeasible without irrigation if soil and water adaptation measures - such as those included in the regenerative agronomic systems and technologies – are not adopted.

72. Almond: almond cultivation is at risk from spring frosts. Almond production is reduced due to higher temperatures, which leads to early bud bursts, and increased vulnerability to spring frosts (especially traditional almond varieties like Awja).

73. Apples: apple blossoms are sensitive to high temperatures (>40°C). Apples production potential is reduced in lower altitude due to the decrease in chilling hours (less than 400 to 900 hours of chilling temperatures per season). Apple harvest is damaged by drought, reduced cloud cover, insufficient water resources and sunburn associated with increasingly high temperatures.

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[81] Adapted from Abdallah et al. (2018). Agricultural risk assessment for Lebanon to facilitate contingency & DRR/CCA planning by the Ministry of Agriculture (MoA), CNRS-FAO, Beirut 2018, 150p. Abdallah, C., Der Sarkissian, R., Termos, S., Darwich, T., Faour, G., (2018). In: Lebanon's 4th national communication (2022) on climate change. Republic of Lebanon, Ministry of Environment.

[82] Ibid.

74. Grapes: both temperature and precipitation changes will affect grape production as well as the wine quality. Grape yields and wine quality is mainly reduced in the Bekaa valley and in Akkar, to a limited extent. Sunburn and early ripening of grapes are expected due to early budding from high temperatures and eventual risk of spring frost. Water demand rises due to excessive evapotranspiration.

75. Tomato: tomato is a warm weather crop, with extreme temperatures affecting production. Tomato production is affected by temperature extremes, frost, high humidity, water stress, and long dry periods. Growing periods will be shorter thus producing less yield, especially in Bekaa Valley, Marjayoun plains, and coastal areas (from water shortages and soil salinization).

76. Wheat: Reduced rainfall and increased temperature damage wheat production. Increases in temperature (a 1°C rise could lead to a 13 percent loss in wheat yields) and decline in spring rainfall impact wheat yield, especially in the Bekaa valley where reduced spring precipitation is common.

77. The updated NDC of 2021 prioritizes adaptation measures and actions that can enhance resilience in the agricultural sector focus on achieving food security through sustainable resource management and enhancing infrastructure to mitigate climate risks[83] by, among other issues:

- Building the capacities of farmers and develop their skills towards sustainable farming.
- Enhancing agri-food value chains efficiency and competitiveness.
- Encouraging private investment in the agri-food value chain.
- Enhancing efficient use of irrigation water.
- Encouraging the use of renewable energy in agricultural irrigation.
- Adapt crop management techniques resilient to climate risks especially drought-tolerant crop types and varieties.
- Adopt Integrated Pest Management (IPM) or organic farming.
- Renovate orchards with low chilling requiring cultivars grafted on drought tolerant rootstocks
- Explore shifting in planting dates and shifting to adapted cultivars to increase tolerance to droughts.
- Enhance water storage capacity to ensure water availability during the dry season.
- Develop and apply improved rainwater harvesting techniques.
- Train and educate farmers and agricultural communities on more efficient and climate resilient farming techniques.
- Support research on the potential genetic resources and potential agriculture production systems (crop rotations, no- tillage agriculture, organic farming, mixed farming) that could adapt to climate change impacts.

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78. The project design has taken these adaptation priorities into account in the selection of climate- smart priorities debated and agreed upon with the consulted stakeholders (Section II, H).

4. The problem the proposed project is aiming to solve

79. The project strategy is to address the below list of barriers and achieve its goal while generating knowledge and partnerships for sustainability:

80. Barrier 1 - Absence of the necessary skills and know-how: policymakers and landscape stakeholders have weak technical capacities for the prioritization and implementation of cross- sectoral climate-smart nature-based solutions. They remain unprepared to mainstream collaborative climate-risk reduction objectives and prevention measures into the day-to-day work.

81. Barrier 2 - Lack of landscape prioritization and integration of climate-resilient land uses and practices: In view of the increasing impact of climate change, and especially the forecast of greater frequency and intensity of extreme events, experts believe that the most effective risk control mechanism consists of the landscape prioritization of high climate-risk areas and spatial organization of resilient land uses and practices.

82. Barrier 3 – Lack of mainstreaming of climate change adaptation priorities into cross-sectoral, and harmonized policies: Limited policy support and weak institutions with sufficient qualified personnel undermine the creation of effective incentives and regulations that support and guide landowners and users in the adoption of climate-smart land uses and practices.

83. Barrier 4: Absence of adequate collaborative governance mechanisms: Partnerships between public administrations and civil society, and between agricultural, forestry and livestock users/owners whose actions must complement each other to be climate-smart, aim at lowering the climate risks at landscape level, but also at increasing the self-preservation of rural communities and their livelihoods, fostering co-responsibility[84]:

84. Barrier 5: insufficient financing mechanisms for nature-based solutions: There are very limited investment opportunities for smallholders to support sustainable transitions, including accessing new climate-smart technologies, materials and infrastructure. There is a lack of comprehensive cost- benefit analyses on the diverse set of benefits generated by climate resilient land uses and practices, and the interest to invest in innovative business models.

[83] Lebanon's 4th national communication (2022) on climate change. Republic of Lebanon, Ministry of Environment.

[84] Varela, E. & Górriz, E. 2014. Enhancing Forest Fire Prevention: Governance. EFI News, Nº 1, Vol. 22.

85. Barrier 6: Incomplete monitoring framework to evaluate the effectiveness of cross-sector climate- resilient practices at the landscape level, and insufficient capitalization and knowledge sharing on successful models for climate adapted nature-based solutions to guide landscape practitioners.

86. Despite the significant number of baseline initiatives supporting restoration, sustainable management and nature protection in the target landscapes, many efforts have a pilot-type approach in which good practices have been tested and small economic initiatives have been successfully developed, without providing an effective response to climate risks that may jeopardize the long-term sustainability and replicability of the experiences.

Theory of change

87. The Theory of Change (ToC) of the project assumes that by: (i) creating enabling conditions for the implementation of climate-smart solutions and businesses in an integrative cross-sectoral way and conciliating the different actors' needs and interests; and (ii) promoting coordinated adaptive monitoring efforts that help integrate lessons learned into landscape-level plans and local to global learning processes, it will be possible to bring the target landscapes to the "situation sought" of resilient landscapes and livelihoods, in which climate-risks are effectively addressed, through multi- stakeholder planning and implementation of nature-based solutions (NbS) contributing to climate change adaptation and mitigation, land degradation neutrality, sustainable livelihoods, and improved conservation outcomes for biodiversity.

88. Locally adapted climate-smart solutions are based on a good understanding of the combined anthropogenic and climate change drivers of climate-risks (e.g. exacerbation of wildfire and hydrologic alterations; challenges for biodiversity and production systems due to higher frequency and intensity of temperature and precipitation extremes) in the target landscapes, and the ability to establish cross-sectoral integration and cooperation mechanisms.

89. The key assumptions for the target landscapes to regain ecological, social, and economic resilience are that:

- Institutions at the national to local levels support the fight against climate change, recognize the need to plan and apply intersectoral adaptation measures, and participate (lead) by providing the necessary guidance and resources in an equitable way.
- Landowners and users, including vulnerable groups, wish to be trained in climate-risk assessment, adaptive management practices and climate-proof businesses, and are committed to be part of multi-stakeholder and gender equality collaborative mechanisms for the adoption of climate-adaptive NbS.
- Private and public actors of the targeted agriculture and forest commodity chains are willing to jointly build innovative marketing platforms that create C-smart value-added product and service offerings.
- The climate-smart practices implemented lead to measurable results on improved ecosystem services and higher landscape resilience (ecological, social, and economic) to climate change.

90. The three components of the project are interdependent in terms of removing barriers and creating conditions for a step-by-step process of climate-risk prioritization, analysis and planning of climate adaptive solutions, collaborative learning, implementation, monitoring, and knowledge management to scale up best practices. Each project component focus on removing the identified barriers:

91. Component 1 will address Barrier 1, Barrier 2, Barrier 3, and Barrier 4 by creating a conducive knowledge and policy environment, in terms of:

- Re-compilation of a user-friendly set of technical guidelines and protocols for natural resource management, sustainable agriculture, and green marketing with contributions from national end international experiences.
- Implementation of a full capacity development program, based on the above guidelines and targeting both trainers, direct beneficiaries, and policy makers in each landscape.
- Development of enabling policy regulations and capacities at the municipality level to replace maladaptive land uses and practices with climate-smart ones, and to sustain the initiniatives of the project.

92. Component 2 will address Barrier 1, Barrier 4 and Barrier 5, through:

- Effective use of financing, assets and human resources to facilitate investments and technical assistance to vulnerable populations in areas with high climate risk.
- Establishment of innovative collaboration mechanisms between public and private actors in commodity chains to diversify market opportunities for C-smart value-added products.

93. Component 3 will address Barrier 6 by creating a conducive environment for adaptive monitoring of the landscape and livelihoods' resilience to adjust climate-smart interventions to the socio-economic and climatic changes of the target landscapes and share and exchange know-how from the local to the global level based on the lessons learned.

94. The result of the implementation of these three components in an integrated fashion will lead to the achievement of the project objective, which is *"**R**estore climate-smart landscapes and support resilient livelihoods in the Shouf-West Beqaa-Mount Hermon corridor through the adoption of nature-based solutions"*.

Figure 14. Theory of Change

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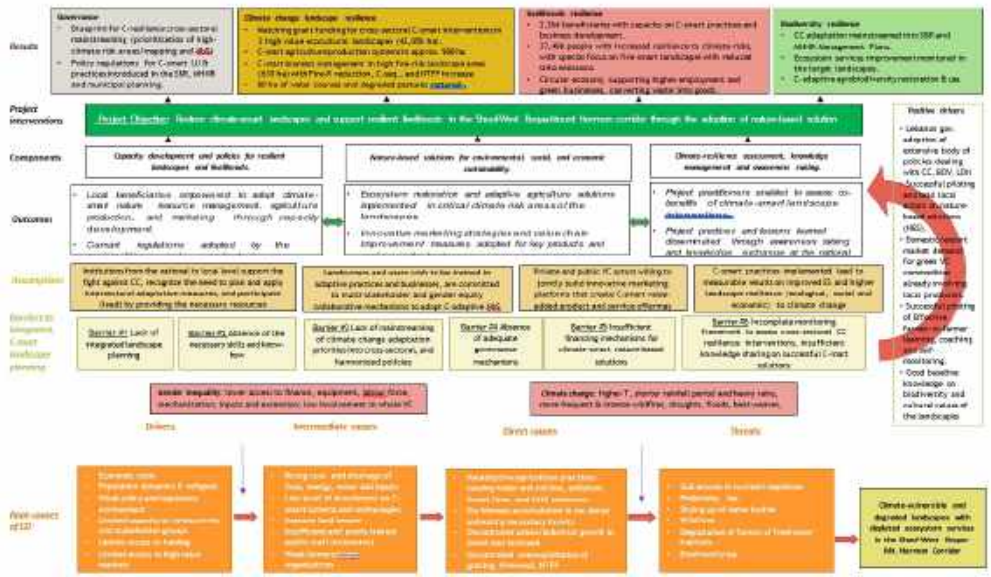

Project Area and Targeting Strategy

95. **Target population**: the project target groups will be: (i) vulnerable smallholder farmers and forest users experiencing deprivations with respect to key living standards (education, health, food, shelter and income) based on the multidimensional Household Deprivation Score (HDS) applied by the WFP for Lebanese residents in each district; (ii) commercial and economically active smallholders and small-scale processors, agro-enterprises and traders; (iii) unemployed young women and men without professional skills that prevent them from accessing job and business development opportunities; (iv) all relevant stakeholders in the target landscapes who will benefit from the climate risks interventions and the enhanced resilience of ecosystems and their services. At project inception, the direct beneficiaries of the project will be identified among these broad target groups by the PMU, based on the scoring criteria that have been defined and mapped by the project design team. Vulnerable smallholder farmers will be prioritized based on the following: (i) live in the highest climate risk category areas in each landscape (Figure 15); (ii) own farmland plots with a size of less than 1 hectare up to five hectares; (iii) farmland plots owned by household-led women. As far as commercial and economically active smallholders and small-scale processors, agro-enterprises and traders, priority will be granted to those actors that show a keen interest to join the project, and at the same time show willingness to join the project and belong to the most economically fragile segment of the population. In the case of unemployed young women and men, the selection of the beneficiaries will be conditioned to the willingness to attend the training program offered by the project. All smallholders engaged in the targeted commodities and those living within the broader landscape will benefit from project's interventions. During the assessment, the issue of Syrian refugees was widely debated within the team and with the different institutions and target groups involved in the exercise. The involved groups agreed on the analysis that, in general, Syrian refugees currently enjoy a better economic situation than native Lebanese, because of the subsidies and grants they receive from UNHCR, and the job opportunities provided to them by several agencies, including WFP. Therefore, the consensus was that, although this category will not be excluded *per se* from the project, they cannot be considered a particularly vulnerable group that should be granted priority.

96. When it comes to the provision of farming and restoration grants (Outcome 2.1 of Component 2), the project will strive to reach at least 30 percent of rural women and youth. As far as Outcome 2.2 is concerned, the creation/upscaling of women cooperatives will be a priority, so in this case the target for women inclusion will rise up to 50 percent. One of the findings of the project design phase is that women are mostly engaged in the processing and marketing section of the agri-food processing value chains. For this reason, a specific category of the grants has been conceived to enhance and facilitate the participation of women in the productive chain. When it comes to youth, the project will be consistent with the Lebanese Ministry of Youth and Sports, which applies this definition to citizens aged between 15 and 29[85]. The project will not engage in underage employment that can be labelled as exploitation: only legal age of employment will be taken into consideration. The new and existing enterprises that request the support of the project will be asked to establish social corporative responsibility standards that include gender-equity and quotas for disabled and other fragile groups.

[85] GoL: "Youth Policy in Lebanon" - April 2012.

97. Geographic targeting

98. The project targets three landscapes that overlap with large parts of the Shouf Biosphere Reserve-Ammiq Wetland-Mount Hermon ecological corridor (see Figure 1):

- The Shouf Landscape covers an area of 13,774 ha, overlapping with 18 municipalities[86], and with a total population of 61,742 people.
- The West Begaa landscape covers an area of 16,677 ha, overlapping with 19 municipalities[87], and with a total population of 77,863 people.
- The Rashaya landscape: covers an area of 11,607 ha, overlapping with 6 municipalities[88], and with a total population of 16,231 people.

99. **Location where the adaptation activities will take place**: As part of the project design process, criteria were defined and applied to carry out GIS mapping and prioritization of critical areas with high climate-risk in the three target landscapes where the impacts of climate change will most negatively affect the natural ecosystems, productive systems, human populations and livelihoods. The project activities will be implemented in the mapped climate-risk areas. The project design team has defined the nature of each of the adaptive activities linked to each type of location characterized by a specific high climate risk (specified in Component 2 of the project). During the stakeholder consultation process, the results regarding the location and nature of activities were presented and validated, and the interest of local stakeholders in participating, benefiting from and contributing to (including in-kind contribution) the implementation of the project was verified. Annex 6 provides more details on the GIS mapping exercise, and details on the location and nature of activities.

100. The GIS mapping has focused on the identification and prioritization of the following locations represented in Figure 15:

101. Landscape areas where increased heat waves, water stress and strong winds caused by climate change carry a high risk of devastating wildfires. This includes:

i. Red polygons (Figure 15): very dense secondary forest stands dominated by *Brutia* pine, high shrubs and coppiced oaks with high fire spread risk that interface with high fire ignition risk sites, such as the road and power line network, urban/industrial settlements, and agriculture terraces.

ii. Pink polygons (Figure 15): small farmland plots characterised by terraces with woody crops (olive trees, fruit trees and aromatic shrubs), buffering the very dense forest stands with high fire spread risk (red polygons) . The collection of agriculture waste should be a fundamental component of regenerative agronomic practices to avoid uncontrolled agricultural burning.

102. The GIS analysis has used the criterion "accumulation of dry biomass" as the main factor increasing the risk of fire spread, and the criterion "anthropogenic use of intentional or accidental fire" as the main factor increasing the risk of fire ignition. The analysis has mapped the interface between (i) areas of very dense woody vegetation with High Fire Spread Risk and (ii) areas with urban centers/buildings, roads and power lines with High Fire Ignition Risk. The result of the analysis (figure 15) defines the location - where in the municipalities of the fire risk-reduction interventions will take place. The nature of the climate change adaptation activities prioritized in these locations are:

Nature of Adaptation Activities	Characteristics	Location (polygons in Figure 15)
Integrated biomass management	Sustainable thinning and pruning operations in critical forest stands with excessive accumulation of dry biomass; chipping and transfer of £ 97%[89] of collected wood to the bioenergy and composting factories supported by the project	Red polygons
	Controlled grazing to prevent undesirable shoot growth activation	Red polygons

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[86] Aammantour, Ain Qania, Baadarane, Barouk, Bater, Batloun, Bayqoun, Botme, Haret Jandal, Jbaa, Jdeidet, Kahlouniet, Kreibe, Maaser el Shouf, Mazraat, Moukhtara, Mrusti, and Niha.

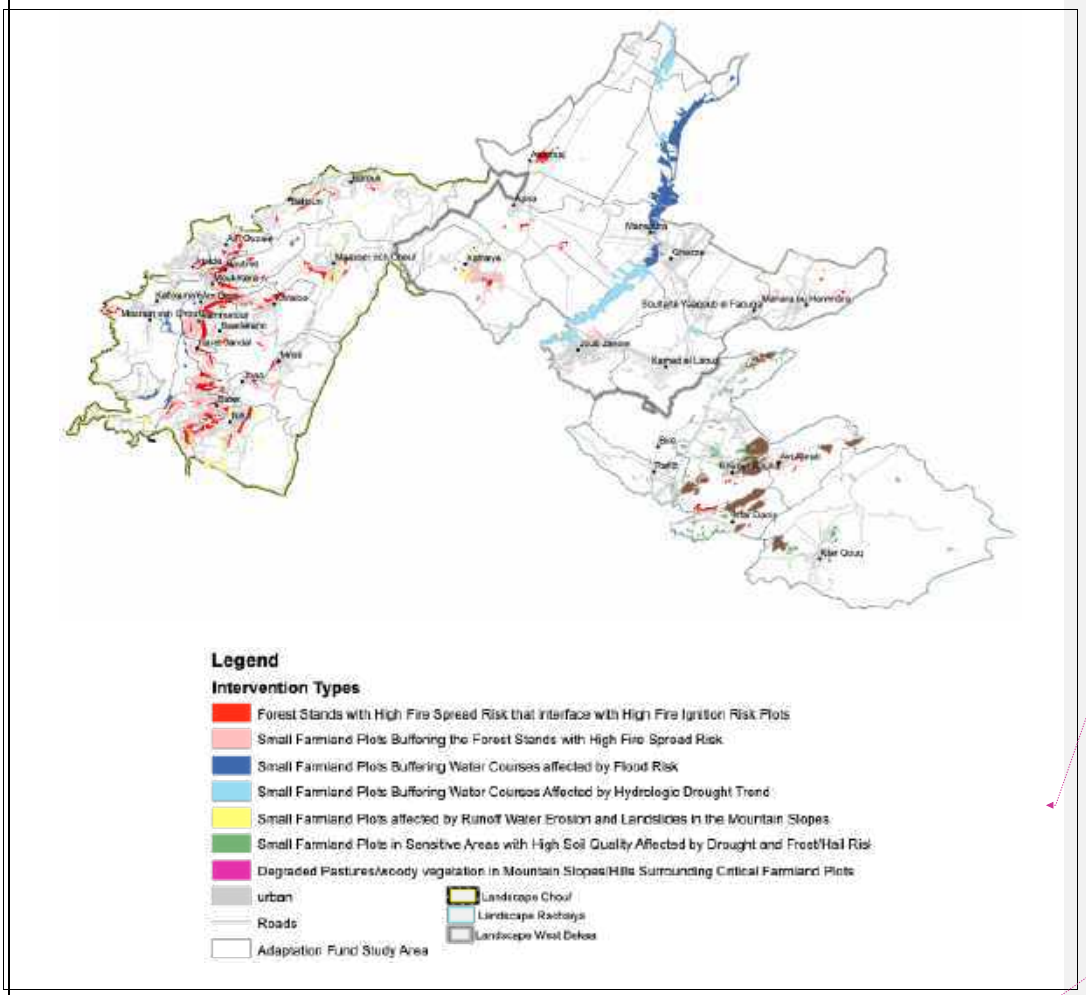
[87] Aammiq, Aana, Chebrqiyet, Deir Tahniche, Ghazze, Haouch Es-Siyade, Haouch Qayssar, Joub Jannine, Kamed El-Laouz, Kafraya, Manara, Mansoura, Mzaraat Zahle, Nasriyet Zahle, Soultan Yaakoub, Tall znoub, Tcheflik Edde Haouch, Tcheflik Qiqano, and Tell El-Akhdar.

[88] Rafid Rashaya, Khirbet Rouha, Ain Aarab rashaya, Mhaydse Rashaya, Kfar Denis, Kfar Qouq, Majdel Balhis, Kaoukaba Bou Arab, Dahr el Ahmar, Aaqabet Rashaya, Aayha, and Ain Aata.

[89] For temperate forests, between 20- 30 m3/ha of deadwood or 3 to 8 per cent of total volume of wood could be suggested as a reasonable amount to ensure ecosystem services (food and habitat for species; soil health conditions; carbon storage, etc.). Dudley, N. & D. Vallauri. 2004. Deadwood – Living Forests. WWF.

	Collection, chipping and transfer of olive/fruit tree pruning remains to the bioenergy and composting factories supported by the project	Pink polygons
Restoration of agricultural terraces as fuel break elements buffering the forest landscape	Restoration of stone walls, preserving/recovering surrounding farmland habitats (ecosystem services) and rainfed regenerative agronomic production, with diversification of locally adapted seedlings from woody plants (e.g. olive, fig, pomegranate, almond, plum, pear, jujuba, walnut, sumac, lavender, rosemary, oregano), cover herbal crops (grasses and legumes) and integration of livestock and beekeeping.	Pink polygons

Figure 15. Location of Priority Climate-risk Areas in the Target Landscapes



103. Landscape areas where the increase in torrential seasonal rainfall caused by climate change carries a high risk of

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flooding. This includes:

i. Dark blue polygons (Figure 5): small farmland plots buffering water courses affected by flood risk. The GIS analysis has used the criterion "areas at risk of flooding", superimposed on the criterion "agricultural plots of less than 5 hectares belonging to smallholder farmers". The analysis has mapped the interface between both criteria, identifying the location - where in the municipalities of the West Beqaa landscape[90] - and how much surface area (number of hectares) will be targeted for flood risk-reduction interventions. The nature of the climate change adaptation activities prioritized in these locations are:

Nature of Adaptation Activities	Characteristics	Location (polygons in Figure 15)
Ecological restoration of the watercourse banks and ponds crossing/surrounding farmland plots	Apply soil bioengineering techniques e.g. brush layering and packing, fiber log and brush mattress, live fascines and stakes) and planting of seedlings for stabilization and revegetation of watercourse banks with native freshwater species (e.g. native species of willows, poplars, elms, ashes, reedmace, wild rose) to reduce risks and improve ecosystem services for crops (e.g. reduce energy and velocity of flood water, promote water infiltration and soil and nutrient retention, promote pollination, pest control, etc.)	Dark blue polygons (section of the land plots under the control of the Litani Authority)
Regenerative agriculture techniques with efficient use of irrigation water in surrounding crops and pollution prevention of surface/groundwater and soils	Adoption of regenerative agronomic production under efficient automatized irrigation, preserving/recovering surrounding farmland habitats (ecosystem services), reducing pollution due to the non-use of synthetic agrochemicals, and applying crop rotation and diversification, including vegetables, fruit trees, vines and fodder crops, and integration of livestock and beekeeping.	Dark blue polygons (private section of the land plots)

104. Landscape areas in the Beqaa plain where agriculture production will be affected by underground and surface water stress. This includes:

i. Light blue polygons (Figure 15): small farmland plots in the karstic aquifer of the Eocene West Beqaa basin. The analysis has mapped the interface between agricultural areas with projected increases in drought and water stress and agricultural plots of less than 5 hectares belonging to smallholder farmers, identifying the location - where in the municipalities of the West Beqaa landscape - and how much surface area (number of hectares) will be targeted for efficient irrigation and water saving interventions. The nature of the climate change adaptation activities prioritized in these locations are:

Nature of Adaptation Activities	Characteristics	Location (polygons in Figure 15)
Regenerative agriculture techniques with efficient use of irrigation water and pollution prevention of surface/ groundwater and soils.	Adoption of regenerative agronomic production under efficient automatized irrigation, preserving/recovering surrounding farmland habitats (ecosystem services), reducing pollution due to the non-use of synthetic agrochemicals, using local agrobiodiversity to produce seeds and seedlings adapted to climate risks, and applying crop rotation and diversification, including vegetables, fruit trees, vines and fodder crops, and integration of livestock and beekeeping.	Light blue polygons

105. Landscape areas where the increase in thermal extremes (both frost and heat stroke) and water extremes (hail and water stress) caused by climate change leads to an increased risk of losses in soil productivity and crop yield of

[90] The flood risk areas mapped in the Shouf landscape present well-preserved riparian ecosystems, which do not require restoration. For this reason, they have not been prioritized in terms of actions on the ground.

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traditional varieties of rainfed legumes, cereals, woody and horticultural crops in the Rashaya region. This includes:

i. Green polygons (Figure 15): small farmland sites in sensitive areas with high soil quality affected by climate extremes. GIS analysis has mapped areas with high-quality soils on traditional farmland plots, defining the location - where in the Rashaya municipalities - and how much surface area (number of hectares) will be targeted by "climate-smart regenerative agronomic practices under rainfed production". The nature of the climate change adaptation activities prioritized in these locations are:

Nature of Adaptation Activities	Characteristics	Location (polygons in Figure 15)
Regenerative agriculture techniques under rainfed production.	Adoption of regenerative agronomic production under rainfed production, preserving/recovering surrounding farmland habitats (ecosystem services), reducing pollution due to the non-use of synthetic agrochemicals, using local agrobiodiversity to produce seeds and seedlings adapted to climate risks, and applying crop rotation and diversification, and applying crop rotation and diversification, including vegetables, fruit trees, vines and fodder crops, and integration of livestock and beekeeping.	Green polygons

106. Landscape areas where the torrential regime of seasonal rainfall and increased summer drought caused by climate change entails an increased risk of edaphic instability (avalanches and erosion). This includes:

ii. Yellow polygons (Figure 15): small terraced farmland plots in instable mountain slopes;

iii. Brown polygons (Figure 15): degraded pastures in instable mountain slopes.

107. The GIS analysis has mapped the mountain pastureland and rainfed agricultural terraces with vegetation cover and degraded soils most exposed to the risk of erosion, identifying the location - where in the municipalities of the three target landscapes - and how much surface area (number of hectares) will be targeted for mountain pasture and farmland restoration. The nature of the climate change adaptation activities prioritized in these locations are:

Nature of Adaptation Activities	Characteristics	Location (polygons in Figure 15)
Restoration and sustainable management of mountain pastures	Restoring woodland islets scattered throughout degraded pastureland. This implies the installation of temporary enclosures in small plots of about 30-40 x 30-40 m with the planting of seedlings from native woody fodder species (e.g. Quercus, Pyrus, Prunus, Crataegus, Rhamnus) to increase forage diversity and availability during the dry season.	Brown polygons
	Implementation of rotation-testing grazing management plans in agreement with shepherds and land owners (municipalities and privates).	
	Establishment of troughs at critical points in pastures with water shortages during the dry season, fed by springs and water ponds.	
	Production of fodder as a rotation crop on farmland plots for sale or barter (fodder in exchange of manure) through agreements between the targeted farmers and shepherds.	Dark Blue, Light Blue, and Green polygons
Restoration of agricultural terraces	Restoration of dry-stone walls in mountain terraces under rainfed regenerative agronomic production, with diversification of climate-adapted varieties of local woody crops (e.g. vine, pear, walnut, sumac, lavender, rosemary, oregano) whose bioclimatic requirements are rising to higher altitudes due to climate change, cover herbal crops (grasses and legumes) and integration of livestock and beekeeping.	Yellow polygons

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108. During the inception phase of the project, the specific details of the different land properties (cadastral data) and their public and/or private owners for each type of mapped location will be collected to effectively plan the different project actions (information, awareness, training, grant funding, technical support, monitoring, etc.). A participatory process, led by the execution team, and with the involvement of the municipalities, landowners, and users of prioritized locations where the project actions will be executed, will help to strategically schedule interventions over the project implementation period so that action is taken first in locations where risk reduction is most urgent. It is estimated that the risk reduction effect of the project's specific actions will positively affect a larger natural and anthropic area adjacent to the intervened sites (settlements buffered by the biomass management intervention sites; farmland plots buffered by the riparian restoration interventions).

Table 6. Number of hectares of prioritized high climate-risk areas in the target landscapes

Landscape	Yellow polygons Small farmland plots in mountain terraces affected by runoff water erosion and landslides	Dark blue polygons Small farmland plots buffering water courses affected by flood risk	Red polygons Very dense forest stands with high fire spread risk interfacing high fire ignition risk areas	Pink polygons Small farmland sites with high fire ignition risk interfacing forest stands with high fire spread risk	Light blue polygons Small farmland sites in areas with underground water stress risk	Green polygons Small farmland plots with high soil quality whose crops are affected by extreme climate events (hail, frost, drought)	Brown polygons Degraded mountain pastures affected by runoff water erosion and landslides	Total
Sub-Total Shouf Landscape	161.9	60.7	371.9	559.3	-	-	-	1,153.9
Sub-total West Beqaa Landscape	11.6	365.9	55.4	159.9	418.3	-	-	1,010.9
Sub-total Rashaya Landscape	-	-	46,8	43,5	-	227,8	370,7	688,8
Total	**173.5**	**426,6**	**474.1**	**762,8**	**418,4**	**227,8**	**370,7**	**2,853.6**

Project objective

109. **Project objective**: "Restore climate-smart landscapes and support resilient livelihoods in the Shouf-West Beqaa-Mount Hermon corridor through the adoption of nature-based solution".

110. The project objective is aligned with the AF Strategic Results Framework, as it aims to support the Lebanese government to implement climate-resilient measures at the landscape level, through actions on (i) climate-smart landscape planning and implementation of innovative adaptive nature- based solutions; (ii) awareness raising and capacity development of all concerned stakeholders; (iii) restoration of ecosystem resilience; (iv) diversification of livelihoods and sources of income for vulnerable households; (v) and policy improvement to promote and enforce the planned climate- smart measures.

111. **Project Components:** the project is structured around three components:

- **C1.** Capacity development and policies for resilient landscapes and livelihoods.
- **C2.** Nature-based solutions for environmental, social, and economic sustainability.
- **C3.** Monitoring, knowledge management and awareness raising.

112. **Outcomes**: the components are structured according to outcomes designed to be implemented in an integrated fashion and to achieve the stated goal and objective:

- **Outcome 1.1**: Local beneficiaries empowered to adopt climate-smart nature resource management, agriculture, and marketing through capacity development.
- **Outcome 1.2**: Climate-smart policies and regulations adopted by the municipalities and protected area authorities of the landscapes.
- **Outcome 2.1**: Ecosystem restoration and adaptive agriculture solutions implemented in the critical climate risk areas of the landscapes.

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- **Outcome 2.2.** Innovative marketing strategies and value chain improvement measures adopted for key products and services in the landscapes.
- **Outcome 3.1.** Project practitioners enabled to assess co-benefits of climate-smart landscape interventions.
- **Outcome 3.2.** Project practices and lessons learned disseminated through awareness raising and knowledge exchange at the national and international levels.

Project Components and Financing

Project Objective: Restore climate-smart landscapes and support resilient livelihoods in the Shouf- West Beqaa-Mount Hermon corridor through the adoption of nature-based solution			
Project Component	**Expected Outcomes**	**Expected Outputs**	**Amount (US$)**
Component 1: Capacity development and policies for resilient landscapes and livelihoods.	**Outcome 1.1**: Local beneficiaries empowered to adopt climate-smart nature resource management, agriculture production, and marketing through capacity development.	**Output 1.1.1**: Set of technical guidelines and protocols for climate-smart natural resource management, sustainable agriculture, and green marketing produced by a team of national and international experts	96,170
		Output 1.1.2: Training of trainers' program implemented, based on the guidelines and protocols produced	90,364
		Output 1.1.3: Full capacity development program implemented, targeting the direct beneficiaries in the landscapes	166,200
	Outcome 1.2: Climate- smart policies and regulations adopted by the municipalities and protected area authorities of the landscapes. .	**Output 1.2.1**: Policy recommendations for mainstreaming the climate-smart priorities into landscape-level plans developed and adopted.	82,500
	Outcome 2.1: Ecosystem restoration and adaptive agriculture solutions implemented in critical climate risk areas of the landscapes.	**Output 2.1.1**: Priority ecosystems restored and managed in each landscape following the agreed guidelines.	901,850
		Output 2.1.2: Priority smallholder farmland production systems restored and managed in each landscape following the agreed guidelines.	

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Component 2: Nature-based solutions for environmental, social, and economic sustainability.			741,708
	Outcome 2.2. Innovative marketing strategies and value chain improvement measures adopted for key products and services in the landscapes.	**Output 2.2.1:** Brand marketing strategy for climate-smart commodities developed in each landscape, based on existing best practices.	375,000
		Output 2.2.2: Local value chains and agrobusiness established/improved based on climate-smart criteria.	840,000
Component 3: Climate- resilience assessment, knowledge management and awareness raising.	**Outcome 3.1.** Project practitioners enabled to assess co-benefits of climate-smart landscape interventions.	**Output 3.1.1:** Protocols and tools for self- assessment of impacts and co-benefits of climate-smart interventions developed and applied by project practitioners.	84,992
	Outcome 3.2 Project practices and lessons learned disseminated through awareness raising and knowledge exchange at the national and international levels.	**Output 3.2.1.** Awareness raising programme designed and implemented at the landscape and the national levels, using media tools and social opportunities.	107,000
		Output 3.2.2. Lessons learned and best practices disseminated.	101,361
Subtotal			**3,587,145**
Project Execution Cost (9.5%)			**376,000**
Total Project Cost			**3,963,145**
Project Cycle Management Fee charged by the Implementing Entity (8.5%)			**336,855**
Amount of Financing Requested			**4,300,000**

Projected Calendar

113. The table below indicates the foreseen dates for the achievement of the following milestones of the project:

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Milestone	Expected data
Start of Project Implementation (inception workshop)	Late 2025
Mid-term Review (if planned)	Late 2027
Project/Programme Closing	2029
Terminal Evaluation	2029

PART II: PROJECT / PROGRAMME JUSTIFICATION

A. Project components

114. The project will contribute to putting into practice the *Adaptation Priorities* defined by the Government of Lebanon in its NDC, by helping the landscape stakeholders to: (i) better understand the current climate risks and the future climate scenarios; (ii) develop their own pathways and approach to cope with the changing climate; (iii) test and deploy innovative nature-based solutions needed to build resilience.

115. The resilience of vulnerable rural populations and their livelihoods to the impacts of climate change is closely related to the effective management of anthropogenic factors that are the root causes of climate risks. Years of rural abandonment and poor management of natural resources have generated unbalanced territories in which: (i) the risk of *sixth-generation wildfires*[91] that cause extensive losses of assets, human lives, habitats, and species, is exacerbated by the high accumulation of dry biomass in the wildland-urban interphase, and (ii) water-related risks are exacerbated by maladaptive farmland and grazing practices and lack of sufficient and effective waste treatment systems.

116. The 2022 IPCC[92] report demonstrated with high confidence that nature-based solutions (NbS), such as restoring healthy ecosystems and improving the management of soil and water in farmlands, are among the most effective strategies that benefit the adaptation to, and the mitigation of climate change, in addition to contributing to other sustainable development goals. The implementation of nature-based solutions aiming to enhance the climate-resilience of landscapes and livelihoods requires defining:

- The LOCATION: prioritization and GIS mapping of the locations of high climate-risk critical areas in the target landscapes where the project's adaptation actions will be implemented. This step was carried out by the team of experts as part of the project design (see Geographic Targeting section above and Annex 6).
- The NATURE of the adaptation activities: designing locally adapted climate risk-reduction interventions with an intersectoral approach. This step was also carried out by the team of experts as part of the project design (see Geographic Targeting section above and Annex 6). More details on the nature of the activities are included in the description of the project components.
- The HOW: (i) design and adopt policy regulations to inform and guide municipal councils about the climate risk-reduction and adaptation role of the proposed interventions, (ii) train practitioners and trainers/technical advisors to facilitate the transition from high climate-risk uses and practices towards climate-smart ones, (iii) develop imaginative formal and informal governance solutions that facilitate collaboration between land users and between institutions to ensure the complementarity of climate-smart measures in high climate-risk areas risks; (iv) adopt sustainable, multiple financing strategy, including public-private partnerships, innovative business models and marketing platforms for high-quality climate-smart products. This will be addressed in the description of the project components.

Component 1. Capacity development and policies for resilient landscapes and livelihoods

117. Under Component 1, the project will support (i) the delivery of guidelines and protocols for the implementation of locally adapted climate risk-reduction interventions in the most critical areas of the target landscapes; (ii) the development and implementation of training programs for both local trainers and project beneficiaries, to ensure the acquisition of the necessary knowledge needed to apply climate-smart practices and businesses, as well as effective implementation mechanisms, and (iii) the adoption of policies, regulations and ordinances on how to sustain the enforcement of climate-smart measures in high climate-risk areas that help municipalities and protected area managers to inform, accompany and supervise their application by land users and owners. Throughout this

[91] Sixth-generation wildfires are those in which climate change has become the main engine in territories with a very high accumulation of biomass. The only way to combat them, experts say, is prevention, mainly through resilient land uses and management practices appropriately distributed in the landscape.

[92] Pörtner, H-O et al. 2022. Climate Change 2022: Impacts, Adaptation and Vulnerability. Contribution of Working Group II to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change.

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component, the PMU will make sure that the task force of experts applies a meaningful mainstreaming of gender, age and social inclusion dimensions in the guidelines and protocols, training programs and regulations.

Outcome 1.1. Local beneficiaries empowered to adopt climate-smart nature resource management, agriculture production, and marketing through capacity development

118. The project will build the capacity of the target actors to implement locally adapted nature-based solutions (e.g. climate-smart ecosystem restoration and management practices, production systems, and local businesses on bioenergy, food and ecotourism goods and services) that help reduce climate risks in the landscape locations that were classified as critical in the mapping exercise undertaken during in the design phase (see Geographic Targeting section and Figure 15 above, and Annex 6).

119. During the design of the project, the team of experts carried out focus group consultations and workshops to introdu the maps with the prioritization of the landscape plots with high climatic risks and the nature of the prioritized adaptation activities linked to each type of risk/mapped plots. The selected climate-smart activities to be implemented by the project beneficiaries and partners in the priority sites of the landscape with high climate risks are aligned with the adaptation measures and actions prioritized in the Lebanon's Nationally Determined Contribution to the UNFCCC. As a result of this effort, the following table was compiled:

Table 7. Climate-risks and climate-smart intersectoral solutions for critical risk areas in the target landscapes

High climate risks	Climate-smart intersectoral solutions	Multiple benefits	Target landscapes
High fire risk: exacerbation of large-scale wildfire risk due to the higher frequency and intensity of heat waves and droughts in landscapes with high accumulation of dry biomass.	• Sustainable management of excessive fuel load accumulation in critical areas of the landscape, through integrated climate- smart forestry, agriculture, and controlled grazing interventions. • Conversion of too dense monospecific secondary forest/coppice into species-diverse and mature high forest stands that are resilient to fires and accumulate higher carbon stocks. • Restoration of dry-stone wall agriculture terraces as fuel-break areas buffering the managed forest stands.	• Local green businesses on bioenergy and compost. • Generation of new jobs in forest management, bioenergy and compost factories, controlled grazing. • Lower energy cost for local households. • Reduced GHG emissions from avoided agriculture fires. • Higher carbon stocks, biodiversity and NTFPs in more mature forest stands.	• High priority: mapped locations in the Shouf landscape • Medium priority: mapped locations in the West Beqaa and Mount Hermon landscapes
High hydrologic disturbance risk: lower capacity to manage irregular availability, scarcer and more polluted water, due to higher frequency and intensity of flood events followed by a longer drought season.	• Restoration of riparian vegetation and soil stabilization on the watercourse banks crossing/buffering cultivated lands to improve water flow regulation and other ecosystem services. • Climate-smart regenerative farming practices, including automatized efficient irrigation, no/reduced till, permanent soil cover, crop rotation and diversification, organic production, integrated pest management, and tree- crop-livestock integration to increase soil health and capacity to infiltrate and retain water, avoid runoff erosion, minimize polluting agrochemicals, diversify production including climate-adapted vegetables, woody and fodder crops.	• Improved yields due to higher quality and quantity of organic matter and water in the soil. • Income diversification through more diversified tree-crop- livestock production/processing, and market segments. • Enhance fodder production and shepherds-farmers collaborative agreements (fodder in exchange of manure for soil fertilization). • Improved regulation of water resources and flood risk reduction. • Improved pollination and pest control. • Reduced agriculture water demand. • Reduced soil and water pollution, with lower risk for human	• High priority: mapped locations in the West Beqaa landscape • Medium priority: mapped locations in Mount Hermon and Shouf landscapes

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		consumption.	
High risk of agrobiodiversity and productivity loss: traditional farmland production areas in the target landscapes are increasingly affected by extreme climatic events (growing intensity and frequency of droughts, frosts, heat waves, strong winds and short-duration heavy rains) due to the abandonment and replacement of crop wild relatives (CWR) by less adapted crop species/varieties and production techniques.	• Recovery of climate- adapted local crop species/varieties grafted in rootstocks of wild crop relatives that are more resistant to drought, extreme temperatures, pests, and diseases. • Regenerative agriculture production under rainfed, focusing on climate-adapted crop wild relatives, including no/reduced till, permanent soil cover, crop rotation and diversification, organic production, integrated pest management, and tree- crop-livestock integration. • Restoration of fodder and water needs for short- distance livestock transhumance involving forest, pastures, and agriculture land.	• Preservation of agrobiodiversity genetic resources for crop improvement and CC adaptation. • Increased and regular production in the face of adverse weather years thanks to higher drought, frost/hail and heatstroke resistance, healthier soil conditions and higher soil water storage and retention. • Preservation/enhancement of farmland habitats providing pollination and pest control. • Soil and water conservation under healthy conditions. • Local green business on healthy food production and processing. • Income diversification through more diversified tree-crop- livestock production/processing, and market segments (organic, fair trade).	• High priority: mapped locations in the three target landscapes.
High risk of soil erosion in degraded mountain terraced farmland and pastures: The soil instability of degraded pastures and agricultural terraces in sloping areas increases with the greater frequency and intensity of short periods of torrential rain followed by more intense and longer-lasting droughts that crack eroded soils and make them more fragile in the face of climatic and anthropogenic impacts.	• Restoration of degraded dry-stone wall agriculture terraces under rainfed regenerative agronomic production, with diversification of climate-adapted varieties of local woody crops (e.g. vine, pear, walnut, sumac, gundelia, lavender, rosemary, oregano) whose bioclimatic requirements are rising to higher altitudes due to climate change, cover herbal crops (grasses and legumes) and integration of the animal factor. • Restoration of woodland islets scattered throughout degraded pastureland to increase forage diversity and availability during the dry season, and sustainable management of livestock following rotation/resting practices.	• Preservation of agrobiodiversity genetic resources for crop improvement and CC adaptation. • Soil stabilization and healthier conditions (organic matter, carbon storage, water regulation and retention, fertility) thanks to lower pressure on vegetation, permanent vegetation cover in farmland plots and ecological restoration of pastures.	• High priority: mapped locations in all the three target landscapes.

Output 1.1.1. Set of technical guidelines and protocols for climate-smart natural resource management, sustainable agriculture, and green marketing produced by a team of national and international experts

Table 8. Summary of planned activities

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- Hiring a task force of national and international experts (TFE) with solid demonstrated knowledge on: (i) Adaptive NRM; (ii) The role of Forest Landscape Restoration in climate adaptation and resilience; (iii) Climate-smart agriculture systems and technologies under rainfed and irrigation; (iv) Mainstreaming climate-smart priorities into policy formulation; (v) Climate-proof technologies in green business development; (vi) Brand marketing strategies for climate-smart products and services.
- Development by the TFE of set of technical guidelines and protocols (based on successful pilots and experts' knowledge) for prioritized climate-smart models to reduce climate risks and enhance landscape and livelihoods resilience.
- Organization of workshops with local stakeholders in the three landscapes to inform, get feedback and validate guidelines and protocols.
- Delivering by the TFE of portfolio of gender-responsive written and audio-visual materials for each climate- smart model (online + hard version).

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120. As a first step, and during the first two months of Y1, the project will set up a task force comprising staff from the organizations that manage the Shouf reserves, Ammiq and Mount Hermon, as well as approximately six national and international experts – half of them women experts - in climate-adaptive ecosystem restoration, agro-silvo-pastoral management, production systems and green businesses. Priority will be given to experts with demonstrated experience in the target landscapes who have already participated in successful pilot experiences of adaptive agricultural production systems, water management, restoration of forest landscapes, integrated management of agricultural and forest biomass, and creation of eco-food and tourism products companies. The experts will be hired by the Project Management Unit (PMU) to deliver a set of services, which will include: (i) The development of the contents and materials for the technical guidelines and protocols; (ii) The formulation of training programs for trainers and beneficiaries, and (iii) a continued technical assistance plan with regular visits to the field, to guide and assist the beneficiaries in the implementation of the restoration, production and business actions.

121. Towards the end of the first quarter of Y1, and once the task force is established, the PMU will organize a workshop - consisting of plenary and focus working group sessions to capture the specific gender, age and social needs - in each landscape with the participation of the municipal entities, agriculture and forest landowners and users, members of the local communities, local NGOs and experts, with interests in the critical high-climate risk areas of each landscape. The objective will be to: (i) Introduce the exercise of prioritization of critical climate-risk areas of each landscape to bring up to date those actors that had not taken part to the project design, and (ii) Introduce the set of climate-smart practices identified as priority risk reduction and adaptive management strategies to be implemented in the mapped landscape plots (Figure 15). The workshops will also address the gender perspective and constraints in land use and tenure, reviewing the different elements to be taken into account for the effective participation of target groups and implementation of the prioritized climate-smart interventions, based on local experience, identified opportunities and conflict resolution mechanisms, tradeoffs and synergies concerning different stakeholders' goals, tactics and decisions, and the existing legal obligations.

122. The outputs of the workshop will be: (i) the organization and scheduling of the climate-smart interventions in the mapped plots, starting with the plots where it is most urgent to reduce climate risks in year 2 of the project (start of field works), and progressively over the following years; (ii) the identification of the public and private owners and users of the selected land plots with whom collaboration agreements will have to be signed; (iii) characterization of the actors, resources and necessary tasks for the proposed climate-smart interventions; (iv) an agreement on a road map with distribution of tasks for the preparation of guidelines and protocols, and for the planning of training programs for trainers and beneficiaries.

123. Once this baseline exercise is completed, and in the second quarter of Y1, the task force - with support from the PMU gender specialist - will produce a set of guidelines and protocols to inform the concrete translation of the climate-smart management models to the field. For each climate- smart model, a set of gender-responsive, adaptive nature-based solutions will be described, as follows:

Table 9. Adaptive nature-based solutions targeted by the project

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Climate risk	Climate-smart model	Adaptive nature-based solutions
High fire spread (FSR) and fire ignition (FIR) risks	Integrated biomass management	• Integrated management (thinning/pruning) of excess biomass in very dense secondary pine and oak forest (FSR reduction) and agriculture and urban waste (FIR reduction) that is combined and used for bioenergy and compost. • Livestock production from controlled grazing interventions in the fuel-break areas resulting from biomass management interventions (fuel load control with a FSR reduction role). • Restoration of agriculture terraces in between and/or buffering cleared forest stands acting as fuel-breaks (FSR reduction), for high-quality olive/fruit tree/NTFP production under regenerative agronomic practices (no/reduced till, permanent soil cover with living - cover crops - and dead mulches, crop

		rotation and diversification, organic production, integrated pest management, and tree-crop-livestock integration), and conservation/restoration of farmland habitats (e.g. hedgerows, scattered trees, dry-stone walls, species-rich natural vegetation cover in and buffering arable land, ponds) providing fundamental ecosystem services.
Hydrologic risks	Integrated water conservation and management	• Automatized efficient irrigation with solar pumping system for diversified fruit tree/herbal intercropping, under biodynamic production, permanent soil cover (dead and living mulch) and IPM to reduce water consumption and minimize soil and water pollution. • Construction of small water recharge structures (e.g. stone check walls, stone/ditches micro-catchments) in key areas. • Management of animal manures/livestock waste for the compost and bioenergy production to help reduce water pollution. • Protection and vegetation restoration around water springs. • Construction of water points for livestock in key landscape areas supporting short-distance transhumant grazing movements. • Planting of freshwater vegetation along waterways and water points.
Temperature & precipitation extremes and strong wind risks	Integrated climate risk regulation models	• Agroforestry planting of scattered trees, windbreaks and hedges in key farmland areas affected by strong winds and thermal extremes. • Planting of scattered woody thickets in open grasslands to provide shelter and fodder for livestock during drought season; rotation/resting grazing system with reduced size of paddocks intensively grazed during shorter periods. • Crop diversification with climate-adapted crop species and varieties under biodynamic/organic rainfed/irrigation production, including minimum soil disturbance, crop diversification, permanent soil cover, IPM and the animal factor.
Genetic reserves of wild crop relatives and other useful plant species under threat due to changes of climate envelope	Climate- adaptive agrobiodiversity management models.	• Mapping and collection of plant reproductive material wild species populations with good attributes for the collection of plant reproductive material to be used in the nursery production of high-quality seeds, seedlings and rootstocks of climate-adapted wild crop relatives and local crop varieties. • Crop diversification under a regenerative agronomic system making use of the climate-adapted seeds and seedlings of the crop wild relatives. • Ecological restoration to enhance the resilience and adaptive capacity of degraded silvopastoral ecosystems that represent key habitats for grazing and other useful plants.

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124. The documents supporting the climate-smart models will include:

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- Description of the objectives and expected results.
- Detailed proposed measures that integrate each model with cost-benefit analysis.
- Fact sheets with information on existing best practices.
- Detailed protocols on gender-related, technical and governance aspects, as well as resources needed.
- Cost, timeframe and expected return.
- Description of the multiple environmental and socioeconomic benefits that derive from implementation.
- Indicators needed to evaluate the achievement of the expected benefits and how to measure them.

125. Special attention will be paid to the catalytic effect of the integration between sectors to ensure the ecological, social, cultural, and economic return on the investments. For instance, the combined use of forest and agriculture woody residues for bioenergy and compost, together with controlled grazing for the maintenance of the cleared areas.

126. The task force will make use of the existing documentation of pilot initiatives that directly or indirectly included climate adaptation objectives in a context of sustainable management of landscape resources, such as, among others:

- The multi-country projects “Mediterranean Mosaics” and “Promoting Sustainable Land Use Practices in Mediterranean Cultural Landscapes”, with funding support from MAVA Foundation, that successfully supported pilot interventions on forest landscape restoration, including adaptive forest management, water management, biodynamic agriculture production, and local businesses linked to food diversification, bioenergy, and ecotourism.
- The projects “STONE” and “Resiland”, with funding support from the Italian Agency for Development and Cooperation (AICS), with pilot interventions on the restoration of agriculture terraces, value chains linked to the production and marketing of non-timber forest products, forest, and pastoral management. The EU-funded project “Saving Water Growing Crops-Lebanon” that piloted of efficient drip irrigation using automatized and solar pumping systems.
- The Canadian-funded FAO project Supporting women’s cooperatives and associations in the agri-food sector of Lebanon.

127. By the third quarter of Y1, and as a final step of this guidelines and protocols’ formulation process, the task force will deliver a portfolio of materials for each climate-smart management model in Arabic and English - with which the PMU communication unit will produce publication materials such as handbook of guidelines, implementation manuals, infographics and leaflets, short videos, pictures, etc. The materials produced will be gender-responsive, responding to women’s specific productive needs, capacities and knowledge in the targeted sectors and value chains, and ensuring that language, examples and content in general does not reinforce stereotypes and bias against women. The materials will be available partly online, and partly in hard versions for distribution at participatory events, training workshops, and field advisory sessions.

Output 1.1.2: Training of trainers’ program implemented, based on the guidelines and protocols produced.

Table 10. Summary of planned activities

• Development by the TFE of training program for public and private extension providers, based on the set of gender-resposive technical guidelines and protocols (developed in Output 1.1.1). • Identification, contact, information, and invitation of interested candidates (women and men from public and private organizations and lead farmers and forest users) to attend the “training-of-trainers” (ToT) learning program over Year 1. • Organization and delivery of the ToT training program by the TFE.

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128. During project design, most stakeholders complained about the lack of, or the poor quality of extension support, which sometimes provides contradictory recommendations leading to negative production results. This project output aims to overcome this bottleneck and train a critical mass of agriculture and forest extension service providers with solid qualifications in climate-smart systems and technologies on ecosystem restoration, agriculture production and agribusinesses to support landowners and users. A pool of trainers will be established, including not only the civil servants from the extension services of the MoA, but also lead farmers, NGO specialists, entrepreneurs, and protected area management personnel. Such pool of trainers will be essential to scale out the project’s capacity and deliver the technical guidance needed for the effective adoption of climate- smart practices and businesses. By widening the pool of trainers and extending it to “local champions” that are not traditionally part of the extension services of the MoA, the project will foster cross-fertilisation and the upgrading of the skills of existing civil servants, who will acquire new skills for the long-term implementation of their work, beyond project closure.

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129. In the first quarter of Y1, the PMU will (i) put together the pool of trainees ensuring the participation of at least 30 percent women, (ii) assess gaps and needs of the identified candidates in terms of knowledge, experience and pedagogical methodologies with a gender focus, and (iii) identify potential capacity development nodes of excellence in/outside the project area that can serve as an example or with which a collaboration can be agreed. The objective will be to identify approximately 30 candidates in each landscape, to be trained throughout Y1 to Y3 of the project.

130. By the third quarter of Y1, six training-of-trainers (ToT) programs will be developed, with learning modules on the different climate-smart practices and businesses with a gender-responsive focus in terms of topics, learning approaches and tools:

- Climate-adaptive techniques in **ecosystem restoration** including (i) the assessment of climate change impacts; (ii) the production and use of high-quality, drought/nutritional hardened seedlings from native species; (iii) the application of locally adapted field restoration techniques (e.g. mix of drought-tolerant species and ecotypes, site selection, planting period and density, hole preparation, soil mulching and micro-catchment, protection measures) that help increase soil water availability and seedling survival, and (iv) the use of soil bio-engineering techniques for riparian habitats restoration.
- Climate-adaptive techniques in **forest management** to reduce water stress and forest dieback, and enhance forest health, maturity, biodiversity and ecosystem services, such as: (i) decision support systems for landscape prioritization of high climate risk areas and fuel management interventions; (ii) evaluation and quantification of the potential biomass of the different agro- forestry land uses of a territorial unit; (iii) methods for calculating the quantity and quality of biomass in the forest stands and multi-criteria for its sustainable extraction and conservation compatible with the functionality and biodiversity of the forest; (iv) standing tree selection methods (species, type of growth, diameter and age); (v) pruning and thinning tools and techniques to be applied; (vi) tools and methods for extracting cut biomass (trunks, branches, pine cones, etc.) in the managed plots and classification for different uses; (vii) methods and tools for chipping smaller wood for different uses; (viii) methods and tools for protection and

assistance to the natural regeneration of the desired species; (ix) calculation of the stocking density necessary per hectare to carry out controlled grazing in the fuel break areas and design of the treatment plan; (x) evaluation indicators of the ecological, social and economic benefits of biomass management and monitoring methods.

- Climate-adaptive techniques in **pasture restoration and livestock management**, including: (i) multifactorial assessment of climate change impacts on the conservation status of pastures throughout the altitudinal/continentality range (seasonal productivity, species diversity, palatability); (ii) Climate change adaptability of local/regional livestock species and breeds; (iii) adjusting seasonal movements and rotational grazing for small ruminants under a climate change scenario; (iv) alternate feed and fodder resources and strategies for sustainable livestock production against impeding climate risks; (v) fodder production in farmland areas; (vi) shelter management strategies to reduce environmental stress; (v) adaptive water management in livestock production; (v) livestock restoration methods and tools.
- **Adaptive management of crops** through: (i) assessment of climate risks; (ii) selection and use of quality seeds/seedlings of plant varieties adapted new climate conditions; (iii) use of biodynamic production techniques, enhancing crop diversification, organic fertilization, agroforestry tree-crop-animal integration; (iv) conservation-restoration of farmland habitats hosting pollinators and pest-control fauna and regulating nutrients and water in/around farmland plots, and (v) holistic pest and disease control; (vi) adaptive management of agriculture soils to enhance fertility, microbiota and water harvesting and storage, through no/reduced tillage, dead and living mulches, and crop rotation systems and techniques.
- **Water management** for climate change adaptation to enhance hydrologic regulation, efficient use of irrigation water, surface/soil water harvesting, underground water recharge, and multipurpose water points for firefighting, agriculture, livestock, and biodiversity in critical climate-risk areas.
- **Climate-adaptive value chain development and market strategies** for the targeted products (bioenergy, compost, seeds and seedlings from native edible/medicinal plant species and local crop varieties, agri-food products and ecotourism), including multicriteria decision support tools on business legislation, sustainable business financial/operational planning, performance and monitoring, environmental and social/gender corporate responsibility, sustainable and gender- inclusive value chains, climate-proof equipment, product diversification, health and quality standards, market analysis, and climate-smart brand marketing.

131. The content of the training modules will be based on the results of Output 1.1.1, as well as on existing gender-responsive training materials and methodologies developed by IFAD[93], ACS, FAO, UNDP, USAID, WB, WFP, and Lebanese research centres, which have addressed adaptation to climate change in ecosystem restoration and management, agriculture production systems and agrobusinesses. The extension curricula and materials will (i) respond to women's specific productive needs, capacities and knowledge in the targeted sectors and value chains; and (ii) ensure that language, examples and content in general does not reinforce stereotypes and bias against women. The training programs will combine theoretical modules with practical field demonstrations in pilot sites where all or part of the techniques taught have already been applied, or farmland sites of champion farmers with demonstrated successful experience.

132. It is expected that **30 trainers (30 percent women) are trained in each landscape** by the end of Y1 and become part of the pool of trainers including ACS staff and the 6 national and international experts who will deliver training to the project beneficiaries starting in Y2. A side outcome of these training sessions will be a set of simple and well-illustrated gender-responsive training materials (e.g. handbook, leaflets, videos, posters) produced, including images, video shootings, farmers' stories with their lessons learned, etc. All the materials will also be available in the web, as part of the project's communication program.

Output 1.1.3: Full capacity development program implemented, targeting the direct beneficiaries in the landscapes.

Table 11. Summary of planned activities

- Development of gender-responsive training programs and modules by the TFE for the selected climate-smart models targeting smallholder farmers and forest users, local entrepreneurs and young unemployed involved/interested in acquiring professional, business development and marketing skills on ecosystem restoration, forest management, fire-risk reduction, bioenergy, water management, agrifood production and processing, agro-tourism.
- Organization of information events in the 3 landscapes for potential beneficiaries about the project's learning and investment opportunities and invitation to interested candidates (women and men) to attend the training program.
- Organization and delivery of the training programs by the TFE over years 2-3-4, based on theoretical and practical sessions and periodic technical assistance visits to the trained beneficiaries during critical seasonal stages of the restoration, management and production interventions supported by the project investments (grants and sub-contracted works).

133. Once both the trainers and the tools are in place, the capacity development effort will address the community of practitioners, user groups and local entrepreneurs of the target landscapes. The interventions will follow a "social learning" approach, which is understood on a three-dimensions way: (i) the depth of learning, that is, changes in

[93] For instance, the Gender Action Learning System-GALS.

understanding, attitudes, and behaviour; (ii) the collective character of learning, facilitated by processes of social interaction, and (iii) the internalization of this learning by broad segments of society[94].

134. In the first quarter of Y1, the PMU in collaboration with the Municipal Unions will organize a "project week" in each landscape, to boost awareness on the start of the works among all potential beneficiaries - smallholder farmers, women and men with between less than 1 and 5 hectares, depending on the agricultural production to cover basic needs, unemployed young women and men, women involved in food processing and catering activities, shepherds, beekeepers and other collectors of non-timber forest products - and to kick off the process of their enrolment to the project workplan. Along the week several information events will take place to present the project, its objectives, and the baseline information gathered so far. Information panels will be placed in strategic sites- such as municipality buildings and the reception centres of the nature reserves - with information on the set of options for the beneficiaries, and with the reference contacts of the offices and people in charge of collecting expressions of interested. A focal point will be set up in each municipality and natural reserve, where interested parties can register, expressing their interest and their contact details – during this week and beyond.

135. In the second quarter of Y1, the PMU and task force of experts will assess whether the applicants who have registered to be part of the project meet the targeting criteria and will conduct calls and visits to discuss the needs of all stakeholders and inform them of the requirements for their participation. The information gathered from the applicant beneficiaries will also be instrumental to fine-tune the contents and methodology of the upcoming training sessions.

136. The selection of the trainees will be finalised by the third quarter of Y1, following parity criteria and ensuring that gender, disability, and age are kept into account. Each trainee will be assigned to one of the six training options outlined in Output 1.1.2. The trainers will develop a self-evaluation tool, which each participant will be asked to complete before the training begins. The self-evaluation tool will allow the task force to understand the initial state of each participant and the stages to follow to achieve optimal knowledge of the different components of the climate-smart model that is the subject of the training.

137. It is expected that approximately 260 beneficiaries will be trained on climate-adaptive forest management and ecosystem restoration, 98 on climate-smart agronomic practices, 60 on climate- adaptive grazing management, and 36 on climate-proof business, **bringing the total of trained beneficiaries to 454** (at least 30% women). Keeping in mind that the average household in the project areas is five members, the training will eventually benefit a total of **approx. 2270 people** – as, in most cases, the household members are involved in the production activities. The project will follow a strategic approach to gender quotas. Since it may be difficult to reach 30% women quota in each training category (e.g., male-oriented grazing management) the project will consider compensating the gap in other categories (e.g. agri-processing and agro-tourism businesses), which may be more accessible to women.

138. The training courses will begin on the first quarter of Y2. Each module will start with two-day theoretical sessions for groups of 20-30 participants that will be coordinated by an expert from the task force and facilitated by 2-3 trained trainers. Approximately seven field training groups in total will be established in each landscape, which will participate in periodic practical training sessions that will address the different restoration, management, production, and business development steps that make up the climate-smart models. The facilitators will keep monitoring the performance of the trainees with one visit every two months on average, while the task force experts will participate directly in 2 or 3 field training sessions per year. The training will be maintained throughout years 2 to 4, with the aim of accompanying the beneficiaries throughout the process of adopting climate-smart measures and help them minimize the side problems of the new production systems - for example possible reductions in the first two years until the regeneration of soil fertility and water capacity and presence of natural pest-control factors. The self-assessment tools produced by the trainers (Output 3.1.1) will be used and completed each year by the trainees at the end of each production cycle.

139. The participation and tuition methodologies will be gender-responsive, building on the lessons learned from other training courses on similar topics, carried out by ACS and other partner organizations (e.g. IFAD, ACS, FAO, UN-Women, WFP, USAID, UNDP, WB). They will consist of:

- Peer-to-Peer Field Learning on the design, implementation and monitoring of climate-smart agroecology, pastoral and forestry practices, following learning methodologies and tools from successful capacity building programs implemented by ACS in the SBR, and shaped along FAO[95] and CARE[96] guidelines for field and business schools. Peer-to-peer field learning will be held along the farming/grazing/forest management seasons in farmland, grassland, and forestland plots, equipped with learning facilities and demonstrative equipment where trainees can learn-by-doing from experienced lead farmers, land managers and trainers.
- Business schools for farmer and forest users to build entrepreneurship, business managerial and marketing capacity while shifting the focus from low-value raw products to a more business-oriented diversified production of high-value agriculture, forest and livestock goods and services. The training methodologies and tools will build on the Forest and Farm Facility Initiative for Climate-Resilient Landscapes and Improved Livelihoods, and the FAO and CARE business school guidelines. The business training will follow an ''action-learning'' approach focusing on entrepreneurship skills and business incubation, addressing issues such as the business vision, the governance and managerial aspects of business companies, including the legal aspects, inclusive membership and gender issues, the development of business plans, the operational aspects of production/processing and packaging addressing quality and safety issues, environmental and social corporate responsibility, the branding and marketing

[94] Rodríguez-Carreras, R.; Úbeda, X.; Francos, M.; Marco C. 2020. After the Wildfires: The Processes of Social Learning of Forest Owners' Associations in Central Catalonia, Spain. Sustainability 2020, 12, 6042.

[95] https://www.fao.org/farmer-field-schools/ffs-overview/business/en/

[96] https://www.care.org/our-work/food-and-nutrition/agriculture/ffbs/

strategies, included certification schemes, etc.

140. All the training activities will place strong emphasis on youth inclusion and women empowerment. Training will also revolve around the role that the trained land use practitioners, cooperatives and business managers should play in landscape-level adaptation and climate-risk mitigation.

Outcome 1.2. Climate-smart policies and regulations adopted by the municipalities and protected area authorities of the landscapes

141. The setting of a conducive policy environment for the implementation of climate-smart land uses and management practices faces a series of challenges:

- Insufficient coordination between sectoral institutions and policies and a lack of coherence and compatibilities between the strategies and regulations defined for the different sectors, making it hard to comply with cross-sectoral adaptation requirements.
- Outdated regulations preventing the implementation of priority adaptation measures. Sometimes, measures lack accompanying implementation frameworks describing in detail the "what, when, how, and who".
- Human resources at the district and local levels lack the knowledge and knowhow to raise awareness, inform and guide land users, thereby preventing the enforcement of adaptive policies.

142. The project will help establish a coherent policy framework at the municipal level for the cross- sectoral integration of the climate-smart interventions, helping define the regulations and municipal ordinances needed to reduce climate risks, and harmonize/apply the climate-smart measures on ecosystem restoration, natural resources management, agriculture production and green business. The project will also organize training activities for public servants and staff from the nature reserves, on how to formulate policies, regulations and ordinances that landowners and users must respect as, for instance, what is allowed to be done and what is not, where each measure must be applied, how it must be done, the delimitation of the intervention area, how much, when, etc. This will empower civil servants to inform and assist landowners and users in the application and respect of the climate-smart political regulations.

Output 1.2.1. Policy recommendations for mainstreaming the climate-smart priorities into landscape-level plans developed and adopted

Table 12. Summary of planned activities

• Formulation of proposals on policy regulations and ordinances needed to help mainstream climate-smart land uses and practices into municipal and protected area (PA) management plans. • Organization and delivery of training by the TFE policy expert to municipal and PA staff on policy formulation and enforcement mechanisms. • Organization of workshops in each landscape with municipalities and PA staff to introduce, revise and validate the proposed regulations and ordinances supporting climate-smart land uses and practices.

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143. In the current situation of strong political and economic crisis, the weak outreach of the central government at the local level gives municipalities and municipal unions a key role in planning and supervising compliance with national policies. Landowners and users need the approval of the municipality in decisions that qualitatively and quantitatively affect land use, especially in terms of resource extraction, construction of housing and infrastructure, use of water and agricultural inputs, waste management, etc. Therefore, municipalities need new protocols to regulate climate-smart uses and practices, so they can inform landowners and users, supervise their actions, and if necessary, penalize those who do not comply with the agreed adaptation measures.

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144. This output will provide support to the decentralized public administration and the SBR and MHNR management bodies to: (i) improve the design and implementation of evidence-based climate-smart policies, regulations and ordinances; and (ii) foster collaboration opportunities between stakeholder groups to ensure a consistent interpretation and integrated application of regulations and ordinances affecting complementary agriculture, forestry and livestock grazing uses.

145. In the second quarter of Y1, the PMU will hire a policy specialist who will assist the task force of experts in: (i) defining the legal obligations for the performance of climate-smart management priorities in high climate risk areas; (ii) formulating a set of municipal protocols and ordinances to guide the application of climate-smart land uses and measures.

146. Throughout the third quarter of Y1, the policy specialist will carry out a review/assessment of the existing sectoral policies and regulations that are relevant to the restoration, conservation and management of resources at the national and sub-national level, and that have impact on the social and environmental aspects in business development, product quality certifications, markets, etc. The assessment will also address existing policy constraints leading to tenure rights, decision- making, education, technology, financing, business development, and employment gender gaps.

147. In the last quarter of Y1, the PMU will organize a workshop on climate-smart policies, inviting members of the task-force, the APACs, the Municipal Unions, representatives of the concerned ministries (water, energy, environment, agriculture, industry, territorial planning, decentralization, etc.). In this workshop, the policy specialist will present the results of the assessment, while the members of the task force will present the climate-smart management aspects

of the different territorial uses and businesses that require definition of specific regulations and ordinances. The workshop will identify the strengths and weaknesses of the existing policy framework and it will outline a roadmap towards more suitable regulation mechanisms in each landscape.

148. Throughout the first half of Y2, the policy specialist will work with the task force members to review and/or formulate a set of new municipal regulations and ordinances as a prescribing policy framework. The proposed regulations and ordinances will have a landscape integration focus to ensure coherence and complementarity among development sectors. They will be produced following a participatory approach, involving key stakeholders, such as the local administration and appointed protected area committees (APACs). They will include information on: (i) the environmental, social (gender-responsive) and climate-smart benefits provided by the promoted uses and practices; (ii) the purpose of the ordinance (minimal acceptable requirements for the design of climate-resilient interventions); (iii) definitions of the climate-smart concepts referred in the ordinance; (iv) when, where and how the ordinance should be applied; (v) standards for the climate- smart intervention; (vi) management and maintenance protocols; (vii) enforcement procedures; (viii) conflict resolution. Likewise, a document will be prepared with recommendations on how to improve existing policies regarding the definition and harmonization of cross-sectoral climate-smart measures. This document will be shared at the central level, through the Ministry of the Environment.

149. In the second half of Y2, the policy expert will organize a short 1-day training in each landscape for staff from the protected areas and the target municipalities on the development process and the contents of the proposed ordinances.

150. Throughout the rest of the project, the PMU will engage with the Municipal Unions and managers of the protected areas to negotiate the mechanisms for adopting the proposed regulations and ordinances, and the approach to inform users (information events, distribution of leaflets, information online and through on average, mobile messages, etc.). The proposed regulations and ordinances will be used by the Appointed Protected Area Committees (APAC) of the two reserves to review their management plans and incorporate the cross-sector climate change adaptation priorities. Likewise, they will be used in the review processes of municipal and municipal unions' plans and strategies, based on the calendars established by each territorial administration. The proposed regulations and ordinances will also support local administrations in the production of municipal ordinances on the uses permitted, promoted and/or subsidized by municipal policies, and on how to incorporate climate-smart management practices in natural resources management.

Component 2: Nature-based solutions for environmental, social, and economic sustainability

151. This component will support the implementation of the climate-smart priorities defined under Component 1, with the double purpose of (1) contributing to the resilience of landscapes and livelihoods through a network of climate-adapted, low-impact, and biodiversity-friendly productive systems in high-climate risk areas; and (2) building more resilient and sustainable businesses and markets for climate-smart products and services, with special focus on youth employment and small enterprises led by women.

Outcome 2.1.: Ecosystem restoration and adaptive agriculture solutions implemented in critical climate risk areas of the landscapes

152. This Outcome consists of the implementation of the prioritized climate-smart interventions (see Outcome 1.1) in the critical climate-risk areas of the three target landscapes that were analyzed, mapped, and introduced to the local stakeholders during the project design phase. It will deploy investments to cover the cost of the workforce, equipment and inputs needed to restore degraded ecological and agricultural systems, carry out integrated and adaptive management of forest and agricultural biomass, and convert conventional agricultural production systems into climate-smart ones. It should be noted that the activities eligible for funding are strictly limited to the ones identified in Outcome 1.1. The beneficiaries will be able to access investment funds through grants for the climate- adaptive improvement of agriculture production systems, or by outsourcing works to local NGOs or companies specialized in the restoration and management of natural resources. The beneficiaries will receive technical assistance from a task force of project experts who will assist in the elaboration of work plans and will provide advice in the use of the guidelines and protocols produced by the project (Output 1.1.1) for the execution of the works.

Output 2.1.1. priority ecosystems restored and managed in each landscape following the agreed guidelines

Table 13. Summary of planned activities

- Organization of participatory events with municipality staff, Litani authority, and landowners & land users in critical high climate-risk areas to introduce and agree on the planned works.
- Organization of call for tenders for partner NGOs and Consultancy Firms to undertake the planned works on integrated biomass management (100 ha), freshwater restoration (20 ha), silvo-pastoral restoration (60 ha), and multi-purpose water reservoirs in the 3 target landscapes.
- Technical assistance by the TFE to the sub-contracted parties for the development of execution plans based on climate-smart guidelines and protocols.
- Hiring of the trained professional workers (Output 1.1.3) by sub-contracted parties to implement the works.
- Provision of technical advice by TEF for effective implementation and to monitor performance and results.
- Development of awareness materials and organization of information events with municipal staff and landowners on restoration benefits and safety measures and protocols linked to fire and flood risks.

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153. The ecological restoration and adaptive management of natural and seminatural ecosystems in critical areas of the landscape represents a collective benefit for the local population and land users and require coordinated action to give consistency to the work carried out in each site. For example, the reduction of excess dry biomass and residues in areas with very high fire spread risk (FSR) and high fire ignition risk (HFIR) should be carried out following the same criteria to ensure effectiveness in terms of fire-risk reduction. For this reason, the project's approach will be to contract the work to one NGO or company in each landscape, to ensure coherence and effectiveness in the execution of the works.

154. In the first quarter of Y1, the PMU and the task force of project experts will meet with the municipal entities whose territory includes areas with different types of high climate risks assigned for ecosystem restoration and/or biomass management interventions to agree on the work to be carried out, based on the guidelines and protocols established in Output 1.1.1. The project and the municipalities with jointly identify the public and/or private owners of the mapped lands and will identify the political regulations (e.g. obligation to clarify the vegetation of the perimeter around settlements and on the edges of roads) that justify the proposed works to the owners.

155. Throughout the first half of Y1, the municipalities will be responsible for contacting the owners and inviting them to a meeting, with the participation of the PMU, to illustrate the proposed interventions, the expected benefits, and the funds that are available to subcontract the works to NGOs or companies with demonstrated experience in this type of work.

156. Based on the GIS mapping of critical sites with high climate risks carried out in the design phase, the following number of hectares per type of action has been estimated in the three target landscapes:

Table 14. Integrated biomass management and ecosystem restoration interventions

Intervention type (cost per hectare)			**Shouf landscape**	**W Beqaa landscape**	**Rashaya landscape**	**Total all landscapes**
			Nº hectares	**Nº hectares**	**Nº hectares**	**Nº hectares**
Biomass management in fuel-break areas	Reduction of excess forest biomass through thinning and pruning (USD 3,665/ha)[97]		60	20	20	100
	Restoration of abandoned agricultural terraces with secondary vegetation to act as fuel-break areas breaking continuity of very dense forests[98]		10	5	5	20
	Agriculture waste management in olive/fruit tree/vineyard crops located in the interface with too dense forest stands (In kind)		294	98	98	490
	Sub-total biomass management	Ha	364	123	123	610
		USD	219,900	73,300	73,300	366,500
Restoration of freshwater ecosystems (USD 2,600/ha)		Ha	-	20	-	20
		USD	-	52,000	-	52,000
Restoration of pastures (USD 3,665/ha)		Ha	10	20	30	60
		USD	36,650	73,300	109,950	219,900
Total restoration and biomass management		Ha	**374**	**163**	**153**	**690**
		USD	**256,550**	**198,600**	**183,250**	**638,400**

[97] This and following figures, based on real data of previous restoration experiences carried out in similar areas of Lebanon in the past five years

[98] This activity is included and described in Output 2.1.2.

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157. Based on real cost data from similar actions implemented by ACS and partner organizations in the Shouf Biosphere Reserve, the project design team has calculated an average cost per hectare for each type of restoration. In total, it is estimated that the project will intervene in 690 hectares, with a total cost of USD 638,400.

158. Through annual calls for tender, the PMU will subcontract the execution of the restoration and biomass management interventions to national NGOs or private companies with proven experience in the project area or other regions of Lebanon. It is planned that approximately 66 hectares will be restored each year during Y2, Y3 and Y4, with an average expenditure of USD 70,900/contract/year. To facilitate the execution of the work, abate costs, and maximise effectiveness the areas tendered for each type of intervention will be grouped as much as possible under a single contract. Annual calls will be issued in each landscape, so it is expected that each year contracts will be stipulated with three different NGOs and/or private companies, each one in charge of the work in a specific landscape.

159. By the third quarter of Y1, The PMU will organize a first call for tender, following a simplified procedure. At least three NGO/private companies will be invited to submit a tender for the first batch of restoration interventions in each landscape. The PMU will draw up the terms of reference for the services, supplies or works covered by the contract and the selection criteria. An information notice will be published online defining the scope, type, and budget of the contracts, the procurement procedure to be applied, and the deadline for the submission of the applications. A Selection Committee including 5 representatives of ACS, municipal unions, academia, MoE and MoA will be in charge of selecting the final candidates - one per landscape. New calls for tender will take place in the last quarter of Y2 and Y3, following the same rules and procedures.

160. Once the contracts for the execution of the works have been signed, the task force of project experts will assist the contracted party in the production of the execution plans for each intervention type. The plans will build on the guidelines and protocols developed in Output 1.1.1, as well as on field data collection and on the information available from pilot experiences carried out in the target landscapes[99], and in similar ecosystems of the country and/or the Mediterranean region.

161. In the contracts, the PMU will set conditions to ensure the hiring of local professional workers trained by the project learning courses organized in Output 1.1.3, on forest thinning, pruning and chipping techniques; soil preparation and seedling planting techniques; construction techniques for the establishment of enclosures and other protection measures; bioengineering techniques for the use of plant cuttings for the construction of live palisades, wattle fences, brush layers, and gravel structures; techniques for using livestock smart fences to organize paddock rotation; etc. The hiring conditions for workers trained by the project will establish gender-responsive criteria to ensure that at least 30 percent of the workers hired are women. The PMU will facilitate the creation of work crews, each composed of 14 local workers and a foreman, to execute the restoration actions. The crew members will be hired as daily workers by the contracted parties to carry out the restoration works with a focus on women and young unemployed. The PMU will ensure that the contracts apply adequate working, safety and economic conditions. The project task force will monitor compliance with the required conditions through periodic field visits.

162. **Biomass management**. The execution plans of the biomass management interventions with a fire-risk reduction overall goal should describe: (i) the thinning and pruning procedures and specifications that alter the fuel in terms of loading and stand structure to increase efficiency in slowing down the spread of eventual fires and improve access for fire-fighting personnel, as well as (ii) the expected environmental, social, and economic benefits.

163. The thinning and pruning plans for the target forest sites will be based on existing guidelines[100] that quantify biomass load and typology for the successional stages of the secondary pine and oak forests in the project area. The plans will indicate the tree species to be managed, the volume of standing stock to be cleared, and the selection criteria for the stems that will be marked for cutting and/or pruning. Based on previous experiences, an average biomass reduction of 50 percent is expected, with an estimated extraction per hectare of 68 tons of larger wood, 21 tons of wood chips (to be used for briquets and compost production), and 0.6 tons of pinecones. After the clearing operations in the secondary pine forests, experts from the task force will identify the presence of saplings of broadleaf tree species (mainly *Quercus, Prunus, Pyrus, Acer, Arbutus*, etc.) whose growth had been stagnated by the excessive density of the pine canopy. Once located, individual protectors will be placed on them or small enclosures will be established around groups of saplings, to facilitate their growth against disturbances and in this way promote the mixed character of the forest stand, its biodiversity and climatic resilience.

164. In the interface areas between very dense secondary forest stands and houses/urban settlements, roads and power lines, the execution plans will define the width of the buffer strip where biomass harvesting will take place, the type and volume of fuel load to be cleared, the controlled grazing procedures to keep the area cleared, and the measures that should be adopted to prevent the occurrence of fires and/or limit their damage. In all cases, the proposed actions will be in accordance with the existing legislation and municipal regulations. Where legislative or regulatory gaps are identified, the project will propose improvements, which will be applied on a pilot basis to demonstrate their effectiveness and be used as a guide in the establishment of new/improved policies, regulations, and local ordinances (see Outcome 1.2).

165. The execution plans will also define the environmental criteria to be followed so as to promote the evolution of the

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[99] Tables on forest biomass management produced by the RESILAND project supported by the Italian Aid Agency (AICS) in the SBR, started in 2022 and still ongoing; the forest management plans produced by ACS' hired experts for the pilot sites of Dalboun, Upper Awali River and Niha.

[100] Ibid.

forest towards more mature stages with higher carbon stocks and climate resilience, higher biodiversity[101] and a more diversified productivity (i.e., non-timber forest products in the forest understorey, production of new oak shootings for beekeeping, biomass, livestock).

166. Once the execution plans are ready, meetings will be organized with the private and public owners and users to inform them on the nature of the proposed actions and about the expected economic benefits from the clearings and pruning operations. In the case of public lands, the largest pieces of extracted wood that are not suitable for the production of briquettes and compost will be donated free of charge to vulnerable smallholder farmers and their families with energy insecurity, while on private lands such wood will remain at the disposal of the forest owners.

167. The execution plans will include indicators and monitoring protocols to assess the effectiveness of the biomass management interventions in environmental and socio-economic terms. The project will build on the biodiversity monitoring plans of the Shouf Biosphere Reserve and Mount Hermon Reserve[102], as well as on other methodologies for monitoring the climate resilience impact of integrated biomass management measures applied to the ecological systems of Mediterranean landscapes. Self-assessment protocols for forest owners and managers will be produced in Outcome 3.1 and the task force experts will conduct training with project beneficiaries to teach and guide them in its use throughout the project and beyond. Details about the project monitoring plan are provided in Part III section D.

168. Along with the clearing and pruning works and saplings' protection measures on forest lands, in the second half of Y2 the PMU communication unit will produce communication and awareness- raising materials such as exhibition panels and information leaflets, targeting the inhabitants of the project municipalities. Yearly information events will be held to raise awareness among the local population and municipal authorities about the exposure to fire-risk, recommended prevention measures that landowners should apply in their properties to reduce the risk, and recommended safety measures and protocols in case of fire at the municipality and individual levels. It is estimated that 20 towns (46,860 citizens) buffering high fire spread risk areas (4 in the Rashaya Landscape, 4 in the West Beqaa Landscape, and 12 in the Shouf Landscape) will benefit from the fire risk reduction interventions.

169. The PMU will buy three shredding machines (one per landscape) consisting of mobile units that can be easily transported to the thinning and pruning forest sites for the chipping of the small wood. The machines will be guarded in the facilities of the three organizations that will lead the biomass management work in the three landscapes - ACS in the Shouf, B-West in the Beqaa, and Mount Hermon Organization in Rashaya. The project will purchase a high-quality model whose effectiveness has already been demonstrated in previous actions implemented in the Shouf Biosphere Reserve.

170. **Agriculture biomass management**. The management of olive pomace and olive/fruit tree pruning remains[103] in farmland plots that interface with the prioritized very dense forest stands will entail the establishment of agreements with the landowners so that they do not burn the pruning remains or pour the olive pomace on the ground. Agreements for the collection of the smaller biomass that is normally burned, will define conditions that benefit both farmers (e.g. removing waste from their property, receiving an agreed number of free briquettes or bags of compost at no cost) and the producers of briquettes and compost (e.g. receiving part of the raw material for their productive activities at a lower cost). The cost of collecting, chipping and transporting the biomass will be covered by the cooperatives/enterprises managing the briquettes and compost factories supported by the project[104] (Outcome 2.2).

171. **Freshwater ecosystem restoration**. The restoration of watercourse ecosystems will enhance the connectivity and ecological health of freshwater systems in the corridor between the Shouf Biosphere Reserve and the Monte Hermon Reserve through the West Beqaa Valley – an outstanding ecosystem that includes the springs and drainage lines of the east and west slopes, the Ammiq wetland and the waterways that run through the Litani river floodplain. The project will help increase climate resilience in terms of higher capacity for regulating flood water, improved soil water retention and water purification in the surrounding land uses, and increased migration capacity of flora and fauna species to areas with favorable climatic conditions.

172. By the end of Y1, the contracted parties, the task force of experts and the PMU will hold a workshop with the Litani Watershed Authority[105], the owners of the farmland plots adjacent to the watercourses, and the concerned municipal entities, to introduce the objectives and intervention measures and protocols included in the contracts. The output of the workshop will be an agreement on the list of riparian native plant species to be used in the plantations, the types of interventions and restoration techniques for each site (limited to the pre-selected list of measures in Table 9), the multiple benefits expected and the role of farmers from the adjacent farmlands, so as to ensure good integration of the restored areas with the production systems. The workshop will take place at the end of Y2 and Y3.

173. The detailed execution plans will include: (i) restoration objectives; (ii) assessment of the state of conservation of the soil and vegetation of the banks of the water courses; (iii) maps and the number of hectares that will require soil bioengineering interventions in addition to plantations; and (iv) number of target hectares. They will also describe the restoration techniques in terms of:

- List of species to be planted, and the quality attributes required in the production and/or purchase of seedlings (e.g., age, root/aerial part ratio, stem base diameter, water, and nutrient hardening, etc.). The project will use as a guide

[101] Key flora and fauna indicators for each type of habitat defined by the Bioconnect project in the SBR and MHNR.

[102] "Bioconnect" Project, supported by the European Commission

[103] Small branches and leaves

[104] Based on successful experiences that are in place in the SBR

[105] The official entity that owns the banks of the watercourses

existing production protocols[106] of native freshwater species such as *Populus alba, Salix libani, Salix alba, Fraxinus syriaca, Ulmus minor etc.*

- Number and distribution of seedlings of each species per hectare.
- Planting season and planting density.
- Soil preparation techniques and soil bioengineering measures such as the establishment of soil retaining walls built of living cuttings of native willow, poplar and ash species or the planting of *Phragmites australis* cuttings as green filters with a phytoremediation effect of wastewater.
- Maintenance techniques and monitoring protocols.

174. Freshwater restoration will mainly occur along 10 meters width on both sides of the water courses. It is estimated that a total number of 20 hectares of degraded freshwater systems will be put under restoration by the project in a network of water courses crossing smallholder farmland plots in the Litani floodplain that forms a natural corridor upstream and downstream of the Ammiq wetland.

175. **Restoration of degraded pastoral habitats**. In order to ensure full ownership of pasture restoration, the project will organise early consultation workshops before the signature of the annual contracts, to analyse the problems related to grazing management, with a special focus on the combined impact of climate change and maladaptive management practices on the abundance and quality of pastures, and in the availability of food, water and shelter conditions in seasonal grazing areas. The output of the workshops will be a set of restoration measures and protocols (drawing from the pre-selected list of measures in Table 9), validated by the involved landowners and shepherds.

176. The execution plans will describe the proposed measures in detail, addressing issues such as:

- Livestock species, carrying capacity, seasonal rotation-resting management system, etc.
- The list of palatable woody species to be planted in woodland islets within large herbaceous pastureland, to increase the availability of food for livestock during the drought season (seen by shepherds as a major constraint).
- The quality attributes required in the production and/or purchase of high-quality seedlings. The project will make use of existing guidelines and production protocols[107] of native palatable woody species such as *Quercus calliprinos, Quercus brantii ssp. look, Rhamnus punctata, Prunus ursina, Pyrus syriaca* etc.
- The number and distribution of seedlings of each species per hectare.
- The planting season and planting density.
- The soil preparation techniques (hole opening period, location, width, and depth).
- The protection measures, such as the construction of temporary enclosures to prevent the access of livestock to the new seedlings.
- The construction of multipurpose water points in critical sites of the landscape to provide water for livestock and support firefighting.
- The acquisition and use of smart mobile fence equipment to organize grassland in paddocks and apply rotational-resting techniques that enhance the regeneration of grasslands.
- The monitoring protocols.

177. It is estimated that a total of 60 hectares of degraded pastures will be under restoration in the three landscapes by the end of Y4. Pasture restoration will be complemented with climate-adapted forage production as part of rotation crops in the climate-smart agricultural production systems supported by Output 2.1.2. The project will promote agreements between herders and farmers based on the exchange of benefits, such as manure in exchange of fodder.

178. **Construction of multipurpose water reservoirs**. The PMU will hire an engineering company to build four water reservoirs with a capacity of approximately 2 million litres each, which will be installed at critical points in the landscape to assist firefighting teams in the event of fires. Two reservoirs will be in the Shouf landscape, where the accumulation of fuel load and fire risk is greatest, and one reservoir in each of the West Beqaa and Rashaya landscapes. The reservoirs will be placed in the most suitable land, which may be publicly, or privately owned, and long-term collaboration agreements will be signed with the landowners. The reservoirs will be built with environmentally sound materials and solar pumping systems for a dual recharge from rain and groundwater. Based on previous experiences in the Shouf, it is estimated that each reservoir will secure, in addition to the eventual firefighting water needs, the irrigation requirement of at least five farmland production units and the water needs of two livestock units. It is expected that the landowners will bring a 25 percent in-kind contribution consisting of labour, stones, and transport costs.

Output 2.1.2. priority smallholder farmland production systems restored and managed in each landscape following the agreed guidelines

Table 15. Summary of planned activities

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[106] Produced within the framework of the "Mediterranean Mosaics" project for the implementation of Forest Landscape Restoration interventions in the Shouf Biosphere Reserve.
[107] Ibid.

- Establishment of a Grants Manager and Committee, and grant application criteria for farmers' investments in climate-smart regenerative agriculture technologies (e.g. no-till and mulching equipment; automatized irrigation equipment), and inputs (e.g. seeds and seedlings from climate-adapted species/varieties; compost; organic pest control inputs).
- Organization of information events on the project's matching grant funding scheme (in-kind contribution from applicants) and several annual calls for applications.
- Support by TFE to grantees in the development of agronomic plans based on the climate-smart guideless and protocols.
- Provision of continuous coaching by TFE and trained trainers to grant beneficiaries for the effective implementation of production activities, and to monitor performance and results.

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179. The project will provide the financial support needed to couple the capacity development effort under Output 2.1.1. and create a network of climate-smart production systems. Such systems will stem from the climate-smart priorities defined under Component 1, and they will be based on proposals elaborated by the beneficiaries during the capacity development actions under Output 2.1.1, in line with the list of pre-selected measures in Table 9.

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180. The funding support will consist of start-up and/or upgrading grants that each beneficiary will be required to match with a 25 percent in kind contribution. There is agreement in the literature on projects of the international development community that community cash and/or in-kind contributions play a significant role in the success of projects, contribute to the overall efficiency and effectiveness of projects, and improve long-term project sustainability. The type of in-kind contribution required in each grant funding window of the project will be described as conditional selection criteria for applicants, so that the approval of funding applications will also depend on the acceptance of the in-kind contributions and on the demonstration prior to signing the contract that the grant beneficiary has the required in-kind. The purchase and delivery to the grant beneficiaries of any equipment, materials, and/or inputs, will occur after verification that the recipient has carried out the necessary preparatory work covered by their in-kind, such as preparing the restoration land or opening holes for planting the seedlings, among others. In addition, the Task Force of Experts that will support the beneficiaries in the implementation of the actions covered by the grants will control that they have the agreed in-kind resources and are being used appropriately. This will also serve to validate the fractional payments stipulated in the conditions of the grants.

181. In-kind contributions by grant recipients are an established and well-functioning mechanism in the Cedar Loan grants managed by ACS and in other grant schemes used in the project area by other donors, such as UNDP. The project design team has calculated the amount of in-kind contributions for each type of grant based on existing tables used by ACS for similar grants related to restoration and management of productive agricultural and forestry systems and the creation of small local businesses. Moreover, during the participatory process of project design with consultations and focus group discussions with local stakeholders, they have expressed their interest and willingness to contribute with the type of in-kind contributions proposed in the project document. The high demand for grants will allow to draft reserve lists of grantees that the Grant Selection Committee could consult in case the selected beneficiaries would not be able to provide the in-kind contribution.

182. The grant scheme will rely on the managing structure and mechanisms established by ACS for its Cedar Loans, supported by a dedicated Grant Manager. The mechanism established by the project for the provision of grants described below is aligned to UNDP grant scheme modalities, which have been found as the most suitable to the project's target areas.

183. The project will hire a Grants Manager who will be responsible for organizing and coordinating the whole grant program, including support to applicants to properly filling out the application forms if needed. A Grants Selection Committee will be set up in each landscape to screen and select applications, with representatives of the PMU, the Municipal Union, academia, and the Ministries of Environment and Agriculture. The following documents will be prepared to support the grant- awarding process: (i) operational manual, (ii) investing support agreement template, and (iii) template for grant application including financial part. Applicants' eligibility will be based on categorical targeting focusing on social vulnerability criteria and relevance criteria based on the prioritization of farmland sites' location in high climate risk areas and the climate-smart priorities defined in Outcome 1.1. Gender equity will be ensured, and eligibility criteria will be carefully established (e.g. lower in-kid contribution requested) to facilitate women and youth participation beyond the "quota rules", and to ensure the effective inclusion of these categories. Each beneficiary will be able to apply to a single grant.

184. The maximum amount of each grant will depend on the type of intervention, and will have to be calculated by the applicants, according to a cost table prepared by the PMU and based on data from rehabilitation and regenerative production projects previously implemented in the region:

185. Restoration of abandoned agriculture plots for diversified production systems under regenerative agricultural practices: a maximum amount of USD 5,000 will be available to cover the cost of facilities and assets, including: organic material and compost; regenerative farming equipment (e.g. no-till planter, mulcher, sprayer, etc); seeds and seedlings of climate-adapted species and varieties of wild aromatic/edible plants (e.g. Lavandula spp., Origanum syriacum, Rosmarinus officinalis, Thymbra spicata, Rhus coriaria, Gundelia tournefortii), trees (e.g. locally-adapted varieties of olive, vine, fig, pomegranate, almond, plum, pear, pistachio, stone pine that are grafted in rootstocks of crop wild relatives), and herbal plants (cereal and pulses used as cover crops) that will be combined in the plantation; preparation and/or purchase of biodynamic pest/disease treatments; beekeeping equipment; equipment and materials to establish an agro-tourism point of sale. Efficient irrigation equipment with sensors and solar pumping will only be eligible on restored agricultural terraces that have a natural water source (e.g. spring-fed pond) located at/near

the edge of the terrace (specified in the grant criteria). Plant communities (e.g. Anethum graveolens, Calendula officinalis, Anthemis tinctoria, Notobais syriaca, Eryngium glomeratum, Centaurea iberica, Trifolium stellatum, Medicago sativa) or individuals (e.g. scattered Pinus pinea, Quercus coccifera, Q. infectoria, Prunus ursina, Pyrus syriaca) that provide important ecosystem services (especially pollination and pest control) will be selectively maintained in/around restored farmland plots or enriched through seed sowing or seedling planting. This type of intervention will be eligible (specified in the grant criteria) for farmers owning degraded farmland plots buffering forest areas with high fire risk (pink polygons of the map in Figure 15) and/or located in mountain slopes affected by runoff water erosion (yellow polygons of the map in Figure 15). A maximum of USD 5,700 will be granted in the case of abandoned terraces that require the rehabilitation of stone walls.

186. Conversion of conventional intensive monoculture plots into diversified production systems under regenerative agriculture practices: a maximum amount of USD 5,000 will be available to cover the costs of facilities and assets, including:

- Small irrigated farmland plots buffering watercourses affected by flood risk (dark blue polygons of the map included in Figure 15): efficient irrigation equipment with sensors and solar pumping; organic fertilizer and compost; regenerative farming equipment (e.g. no-till planter, mulcher, sprayer, etc); preparation and/or purchase of biodynamic pest/disease treatments; farm equipment; seeds and seedlings of climate-adapted species and varieties of vegetables (e.g. potatoes, tomatoes, cucumber) and fodder crops (e.g. legumes such as Medicago, Lathyrus), vine and fruit trees (e.g. pear, plum, cherry, almond); beeking equipment; equipment and materials to establish an agro-tourism point of sale. Sustainable agricultural production on these farmland plots will be reinforced by freshwater restoration activities in the watercourse banks buffering them (see Output 2.1.1), which will provide important ecosystem services (e.g. water regulation and purification, soil fertilization, protection from wind and desiccation, pollination, pest control).

- Small rainfed/irrigated farmland plots buffering water courses affected by hydrologic drought trend (light blue polygons of the map included in Figure 15): same regenerative agriculture facilities and assets as in the previous point. In terms of crop types, seedlings of climate-adapted species and varieties of olives, vines and fruit trees (e.g. almond, jujuba, apple, persimmon, pear, plum). In these locations, the grants criteria will specify that energy-efficient irrigation equipment can only be included in the case of applicants with farmland plots where there are legally established wells and with reports from the Litani Authority indicating that water use and levels are sustainable (selection criteria). In general, and due to the increase in soil water stress in these locations, rainfed cultivation will be promoted through the grants, encouraging regenerative farming actions of soil water storage and evaporation avoidance, and the use of drought-resistant crop varieties (selection criteria).

- Small farmland plots in sensitive areas with high soil quality affected by drought and frost/hail risk: same regenerative agriculture facilities and assets as in the previous points, excluding irrigation equipment, since in this case all crops supported by the grants will be rainfed. In terms of seeds and seedlings, the grants for these farmland plots will cover the cost of local varieties better adapted to climatic risks of arable crops (e.g. wheat, barley, chickpeas), and woody crops (e.g. vine, sumac, pistachio, olive, almond, oregano, lavender), as well and beeking equipment to take advantage of the high melliferous value of such crops and the well-preserved, pollutant-free surrounding farmland habitats.

187. The grant amount will also depend on whether part of the woody plants of the crops should be replaced, which would imply the purchase and planting of all seedlings, or if the existing plants will be maintained with a need for a lower percentage of seedlings of other species for crop diversification, in addition to the necessary equipment and inputs. For irrigation systems the maximum amount will be USD 5,000 per grant; for rainfed crop systems, the maximum amount will be USD 4,000 per grant, including watering equipment to assist crops in critical phases of development if there is a water deficit.

188. Crop diversification under regenerative agronomic practices will help reduce climate risks (e.g. reducing the risk of complete crop failure thanks to the differential adaptive capacity of the different species and varieties planted; enhancing pest control, pollination, soil fertility and soil water content), while increasing yields and household incomes, improved nutrition and food security (wider range of vegetables and animal products), and new marketing opportunities.

189. The beneficiaries of the grants will provide a 25 percent in-kind contribution. In-kind may include labour, tools, equipment, and cultivation machinery, depending on the type of intervention and the amount of each grant.

190. In the second quarter of Y1, the PMU will organize introductory information events in each landscape, to introduce potential beneficiaries to the project grants, objectives, eligible beneficiaries, eligible actions to be financed, minimum and maximum amount per grant, type of items to be covered, eligibility according to guidelines and protocols established in Output 1.1.1, mechanisms and timing for applications, selection criteria, duration of the action, grant payment methods, evaluation system, etc. Access to information and participation in information events and the design and content of the materials used will take into account overcoming barriers and addressing specific gender needs. The communication staff of the PMU will assist the Grants Manager in the preparation of a grant package to be distributed in these events. The package will also be available at the information points of the three landscapes (e.g. municipal offices, information centres of the protected areas), and it will be accessible online. The PMU will also organize a one-day event every four months to help new applicants fill their applications.

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Table 16. Percentage of grants and grant funding in each landscape

Grants	Shouf Landscape	West Beqaa Landscape	Rashaya Landscape	Total
%	24.6	36.2	39.2	**100**
USD	124,250	182,200	197,550	**504,000**

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191. The selected applicants will sign a contract with the PMU, in which they will commit to the implementation of the climate-smart production actions and to the in-kind contribution. The contract will define a gradual payment system conditioned based on milestones for each step of the agreed action.

192. Priority will be given to applicants who have followed the training courses under Output 1.1.3, although all potential beneficiaries who are eligible and meet the selection criteria may apply. The applications submitted by more than one farmer will be favoured, so as to encourage the collective use of assets and equipment financed by the grants among neighbouring farmers.

193. Each grantee will receive technical support throughout the project to ensure the transition and consolidation of the regenerative agronomic production systems. The project task force of experts will provide continued technical advice and knowledge refreshment throughout the implementation period, with periodical field visits, online, and WhatsApp info exchanges. The beneficiaries and experts will jointly agree on the calendar of technical assistance, to make sure that this comes at every critical time of the work plan. Likewise, the experts will use a self-assessment tool that will help the beneficiaries understand at which phase of the implementation process they stand (see Outcome 3.1).

194. The international experts involved in the project will be invited to participate in two yearly visits throughout the last three years, while national experts will pay four visits per year to the beneficiaries of the grants. The experts will develop the content of written and graphic materials, as well as short videos, to guide farmers, that will be printed and hosted on the project website. Visits will also be organized to the farmlands of "champion farmers" to exchange knowledge and resolve doubts about the implementation of the different techniques applied and observe the type of results expected.

195. Overall, the grant scheme will be endowed with a total amount of USD 504,000. It is estimated that an average of 98 grants (at least 30% women grantees) will benefit at least 490 people depending on farmland production. The number of grants will be different in the three landscapes, putting more focus on high climate-risk areas affected by hydrological imbalances combined with thermal extremes in the West Beqaa (36.2 percent) and on high climate-risk areas with high quality soils affected by increased thermal extremes and drought in Rashaya landscape (39.2 percent). In the Shouf, the main focus is the climate risk of higher intensity and frequency of large-scale wildfires, with agricultural biomass management interventions already addressed in Output 2.1.1, so the percentage of grants will be slightly lower (24.6 percent)[108]. The first call for applications will be advertised towards the beginning of Y2, so that the first batch of grants can become operational at the start of the production season of the same year. A second round of applications will happen in early Y3, to capture new proposals that pop up as the capacity development program unfolds.

Outcome 2.2. Innovative marketing strategies and value chain improvement measures adopted for key products and services in the landscapes

196. One of the key findings of the design phase was that farmers in the target landscapes usually lack the capacity, knowledge and means to add value to their produce. For the most part, these are sold as raw products to middlemen, at low prices that often do not compensate for the cost of production. Farmers also lack the assets needed to mitigate/minimize the risks connected to climate variability and extremes, such as cold storage chambers and solar driers. Furthermore, ill choices were made in the past, based on short-term assessments, such as the massive shift from traditional crops to apples production, which exposed many producers to a very volatile export market, and the low adaptability to climate change risks of most varieties of cultivated apples.

197. The direct marketing by producers in the existing regional markets is a difficult endeavour due to the high cost of transportation, especially in this period of economic crisis. In Rashaya, an annual market is organized in October, which is attended by thousands of people from all over Lebanon due to the high reputation of agricultural products from this region. At the time of writing the project, a fruit and vegetable market was also being built in the town of Baqaata, in the Shouf landscape. A few leading farmers have started diversifying their production and marketing strategy to mitigate the impact of climate shocks. A few farmers are also active on the social media and use these channels to post information and pictures on their activities.

198. In the attempt to promote the natural, social, and economic values of the Shouf Biosphere Reserve as a destination for national and international tourists, ACS developed a marketing strategy for high-quality products processed by local women cooperatives and for high quality food and traditional dishes. ACS also supported the creation of the private company “Shouf Destination Management Organization (DMO)”, with the aim of improving linkages/info sharing between goods and service providers and customers, while at the same time improving the efficiency and

[108] This contributes to achieving an equal distribution of investment funds in the three landscapes.

effectiveness of the communication system of the goods and service provider.

199. Similarly, the well-known organization Souk El Tayeb set up a network of sites and marketing platform mechanisms encouraging cross-community engagement, connecting consumers who value traditional, high quality, organic food products and meals to the growers, producers and local cooks. Souk El Tayeb also established an organic farmers' marketplace in Beirut with a daily showcase of producers and farmers, and two "Tawlet restaurants" where chefs from all over Lebanon promote local products and traditional recipes with high-level standard cuisine.

200. Overall, this Outcome will contribute to increasing the capacity of agricultural organizations and cooperatives to increase the quality and diversity of their produce and the climate-proofing of the value chains, by adopting new storage, processing and marketing measures that reduce their vulnerability. The project will build on experience and lessons learned and will encourage the local producers and businesses to join existing marketing platforms through which develop diversified branding and marketing strategies. This will include strengthening long-term relationships with buyers and supply chain customers and increasing consumers' awareness on the added environmental, social, and economic value of climate-smart products and services.

Output 2.2.1. Brand marketing strategy for climate-smart commodities developed in each landscape, based on existing best practices

Table 17. Summary of planned activities

• Development of partnership agreements and sub-contracted services with the existing Destination Management Organizations (DMOs) in the Shouf (officially established), West Beqaa (informally established by B-West) and Rashaya (informally stablished by Mount Hermon Organization) to enhance their capacity as marketing platforms in terms of: • Development of a brand marketing strategy for selected climate-smart products and services in each landscape. • Reinforcement of the DMO management software and promotional materials to enhance linkages between producers, VC actors and consumers. • Establishment of a local farmers' market in each landscape.

201. This output aims to enhance the economic viability of the climate-smart producers and businesses supported by the project, through branding and marketing interventions that facilitates producers' access to a wider range of niche markets, and increases consumers' awareness on the added environmental, social, and economic value of climate-smart productions and short value chains.

202. A critical success factor will be the design of a strategy for the branding and marketing of the high-quality goods and services offered by the beneficiaries, in line with the climate-smart priorities. The project will build on successful experiences on **brand marketing strategy for climate-smart commodities** from other areas of the Mediterranean region, such as the "fire flocks" brand marketing strategy in the province of Girona (Spain) for the high-quality meat and dairy products of herds used to abate fire risk through controlled grazing in the region[109].

203. The project will take advantage of existing marketing platforms and facilities, strengthening them and broadening their scope. The marketing vehicles identified at project design are the Destination Management Organizations (DMOs) that operate in the target landscapes. The Shouf Destination Management Organization (DMO) is a legally established company with its headquarters in Maaser El Shouf. Informal DMOs' committees for the West Beqaa and Rashaya have also been established in the headquarters of B-West NGO and the Mount Hermon Park Management Organization respectively, following the examples of the Shouf DMO and learning from its experience to develop their own strategy and create market opportunities for high-quality goods and services linked to their respective natural and cultural heritage. The project will also capitalize on, and build partnerships with other successful actors, such as the Beirut-based Souk El Tayeb social enterprise working on national and international projects to promote and preserve culinary traditions, rural heritage, and the natural environment.

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[109] The products labelled as "fire flocks" give visibility vis-à-vis consumer and highlight the fundamental value that shepherds, and their herds of local breeds, play to prevent large scale wildfires that may cause the loss of natural forest, human lives and their homes, through the marketing of their fire-smart products: local meats and dairy products of the highest quality.

Shouf Destination Management Organization

The Destination Management Organization (DMO) for the Shouf District is an independent company set up in early 2023 and registered at the Ministry of Justice, that oversees and coordinates an initiative for the transformation of the Shouf district into a sustainable destination for consumers of tourism and local products based on the Shouf eco-cultural identity and traditions. Aiming at promoting the Shouf region as a key destination for tourists and linking various types of ecocultural high-value goods and services with market players and consumers, DMO closely collaborates with various stakeholders including farmers, guesthouses, table d'hôte, hotels, and resorts. This cooperation framework offers each partner the chance to contribute to the success of DMO's mission while bringing in their expertise in sustainable development, community development, social cohesion, tourism, agrobusinesses, advertising and marketing, which combined are essential for promoting and ensuring the sustainability of the destination. The DMO formalizes the participation of service providers through a memorandum of understanding signed by both parties and the Shouf Area Development Committee (SADC). Direct connections between producers of goods and services and consumers, sale of quality local products with added ecocultural value, touristic bookings and reservations are forged thanks to a fully operational e-commerce platform dedicated to Destination Shouf. The DMO office is located in a renovated traditional house in Maaser El Shouf, providing a fitting base for the DMO's team currently composed by three staff.

The Shouf DMO is rapidly becoming a reference for the farmers and value chain operators on the western side of the Shouf Biosphere Reserve, supporting quality production and control, facilitating on-line sales, facilitating the participation of local tourism and agro-business players in international regional fairs (Middle East, Euro-Mediterranean) to open new market opportunities, and connecting the producers to the customers and buyers through a network of selling points and local markets.

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204. The agriculture producers and local businesses supported by the project will be empowered to acquire the skills and the means needed to plug into these marketing platforms and become active parts of them.

205. In the first quarter of Y1, the PMU will organize a meeting with the heads of the three DMOs and Souk El Tayeb to present the project and agree on a collaborative partnership for the implementation of the Marketing Outcome. As a following step, in the second half of Y1 the PMU will hire an expert to assess the strengths, weaknesses and needs in terms of marketing development of the value chain actors involved in bioenergy, food crops, dairy, NTFP products and ecotourism in the target landscapes, and gather a menu of case studies on marketing experiences linked to climate-smart products in the Euro-Mediterranean region and elsewhere. The results of the study will be presented in a workshop involving the DMOs, Souk El Tayeb, local tourism and agrobusinesses and public entities linked to the environment, culture and industry, and members of the key commodity chains targeted by the project - members of local producers' organizations and cooperatives, local entrepreneurs, middlemen, retailers, tourism agents, etc. The workshop will inform the participants about the project objectives in terms of marketing, and on the results of the analysis. The output will be a validation of the proposed strategy to empower the DMOs, local agrobusiness and tourism actors to make use of marketing tools and opportunities linked to the climate-smart products and services of the project.

206. The PMU and the DMOs will agree on the terms of reference of a grant agreement in each landscape, to increase their capacity and create market opportunities for the project beneficiaries and on a road map to formulate the strategy and action plan of the DMOs, building on the experience of the Shouf Destination Management Organization. The agreement will define roles and responsibilities, membership conditions, expected results over the project lifetime, and the plan for sustainability beyond the project life.

207. The grant agreements will have a total budget of USD 125,000 per landscape or DMO, and will include the following tasks:

- **Development of a brand marketing strategy** for selected climate-smart products in each landscape. In Y2, each DMO will hire the services of a communication & marketing expert to analyse branding opportunities for the products with additional climate-smart value supported by the project. The strategy will be oriented to create and communicate a positive brand image focusing on the circular and human-centred approach "beyond" the climate risk reduction benefit. The expert will help create stories that stir the conscience of consumers on the climate- risk reduction value of each product - e.g. bioenergy, compost, dairy, meat, and food derived from fire-smart management practices that reduce the risk of wildfires. The project will approach retailers such as shops, restaurants, and petrol stations, to explain the additional value the products and their potential to attract new segments of consumers. The retailers will be encouraged to join the branding campaign and contribute to its shaping, based on their needs and views. A graphic design expert will be hired to design: (i) a label that certifies the climate- risk reduction role of the climate-smart production systems, that will be used in the packaging of the products; (ii) the information materials to be displayed at the points of sale, and (iii) the web landscape mapping with the location, pictures and info/stories about the network of producers and retailers that are part of the campaign. The expert will also identify the audience segments that are likely to agree on spending more for climate-risk reduction high value products and he/she will create the brand image and messages for the various target audiences. The expert will also propose a variety of marketing channels, including the web, social media, and local advertising channels, and he/she will conceive 2/3 marketing campaigns, crafting the messages, images, etc., according to the specifications of the various platforms.
- **Reinforce the DMO customer relationship management software and promotional materials**. Starting in the first quarter of Y3, grant funding will support the development of services for the producer organizations and local agrobusinesses such as online and mobile phone data to improve production (e.g. agroclimatic data for crop

calendar optimization and irrigation optimization; pests and climate risk alerts), e-commerce services and promotional materials based on the climate-smart branding strategy for the landscape goods and services. These may include promotional video, booklet, landscape mapping of climate-smart interventions, actors and products, periodic magazine with climate-smart stories of the territories, etc. These tools will facilitate the promotion of the products and will allow producer organizations and local businesses to connect with interested buyers and develop personalized and targeted marketing activities.

- **Production of the equipment and materials necessary to establish a local farmers' market in each landscape**. At the beginning of Y3, grant funding will help design the exhibition space and purchase the materials to build attractive display stands, shelters, neatly lettered signs identifying the farmer and his/her farm, electricity items, etc. The DMOs will help advertise the market to the public. Part of the support will go to the single actors/beneficiaries, while another part will create or strengthen horizontal and vertical links throughout the value chain. For instance, the producers of a given landscape will analyze options to share transportation costs and the rental cost of points of sale in farmer markets.

208. To make the most of marketing opportunities for the targeted woman-led business, DMOs will identify proper gender-responsive marketing channels (e.g. benefits of marketing your business as women-owned and potential negative/positive implications to be considered; women entrepreneurs to understand current digital trends; access to events and resources geared towards women entrepreneurs; strategies/messages to attract customers who value diversity; identifying brand values and messaging about women-led business values; etc.) so they can make the most of their marketing efforts.

Output 2.2.2. Local value chains and agrobusiness established/improved based on climate-smart criteria

Table 18. Summary of planned activities

- Establishment of a Grants Manager and Committee, and grants application criteria for entrepreneurs' investments in upgraded/new climate-proof businesses:
  - Bioenergy factories (at least 1 per landscape).
  - Composting units (at least 1 per landscape).
  - Women-led businesses for processing and marketing of agri-food products and agro-tourism services (at least 3 per landscape).
  - Plant nurseries for the production of seeds and seedlings of climate-adapted species/varieties (at least 1 per landscape).
- Organization of information events on the project's matching grant funding scheme (in-kind contribution from applicants) and several annual calls for applications.
- Support by TFE to the grantees in the development of business plans based on the climate-smart guideless and protocols.
- Provision of continuous coaching by TEF and trained trainers to grant beneficiaries for the effective business development and marketing actions, and to monitor performance and results.

209. The project will provide the financial support needed to couple the capacity development effort under Output 2.1.1. and concrete support to new local business or to existing entrepreneurs who wish to become climate resilient in their production, processing, and marketing operations. The funding support will consist of start-up and/or upgrading grants up to USD 45,000 each, that each group of beneficiaries (e.g. producer groups or cooperative members) will be required to match with in kind contribution (see explanation about in-kind contribution in Output 2.1.2). Grant application and selection will follow the same procedures as those described in Output 2.1.2, respecting the list of eligible activities and expenditures mentioned here below for which the E&S screening was conducted.

210. The maximum amount of the grants will depend on the type of business to be supported:

211. Upgrading and/or establishment of new briquettes factories: a maximum of USD 45,000 may be requested to upgrade and/or establish one or more new briquettes factory in each landscape (at least 3 factories with a total amount of USD 135,000). The biomass for the production of the briquettes will come from the forest and agriculture waste obtained through the sustainable biomass management actions supported by the project (see Output 2.1.1). The grants will cover the following type of expenses: workshop rehabilitation; production equipment (e.g. briquettes machine, mixer, solar drier, etc.); packaging/labelling equipment and materials; business planning and marketing staff cost. The beneficiaries of the grants will contribute an average of 25 percent in-kind contribution, which may include workshop space and running costs, labour, wood chipping, agriculture waste collection and transport. It is estimated that this will lead to the production of approx. 2 million briquettes per year over the three last years of the project, the equivalent to the energy needs of 1,000 households. The labelling of the briquettes will follow the branding criteria developed in Output 2.2.1, indicating the fire risk reduction value derived from their production and consumption, introducing the concept of circular economy, and contributing to increase awareness on the value of managing biomass waste as a measure to abate the risk of fires.

212. Establishment of composting units: the maximum amount that may be requested is USD 45,000 to cover the costs for the establishment of at least one composting unit in each landscape (at least 3 units with a total amount of USD 135,000). Grant funding will cover the following type of expenses: tools, windrow turner, tractor, packaging/labelling equipment and materials, business planning and marketing staff cost. The beneficiaries of the grants will contribute on average 25 percent in-kind contribution, which may include working space and installations, labour, and transport of biomass waste. Each unit will have the capacity to produce 14,000 bags of 25 kg of compost every year, with an estimated selling price of USD 1.8 per bag. The compost bags will follow the branding criteria developed in Output

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2.2.1, increasing awareness on the importance of avoiding the practice of burning agricultural waste to abate fire risk caused by climate change throughout autumn and winter seasons. It will also help to raise awareness about the opportunity to turn waste into a valuable product, as a way to progress towards a circular economy.

213. Upgrading and/or establishing women-led businesses for the processing and marketing of agri- food products: The targeted agri-food value chains would include bee-keeping products, dried culinary herbs and distilled water from cultivated wild herbs/shrubs (e.g. Syrian oregano, sumac, gundelia, rose, eryngium, sage, lavender), dry fruits, molasses and syrup from cultivated wild and local varieties of fruit trees (e.g. pine nuts, local varieties of pomegranate, fig, plum, vine, mulberry, walnut), processed vegetables (e.g. tomatoes, green beans, sesame, bulgur) and dairy products (e.g. kishk, labne). Processing activities will build on the innovative role already demonstrated by women's cooperatives in the target landscapes, in terms of mixing different food products that give an added value to the final product. The maximum amount that may be requested is USD 45,000 to cover the costs for the establishment of at least three agri-food processing businesses in each landscape (at least 9 units with a total amount of USD 405,000). Grant funding will cover the following expenses: workshop rehabilitation, solar driers, cold storage equipment, packaging/labelling equipment and materials, business planning and marketing staff cost. The beneficiaries of the grants will contribute an average of 25 percent in-kind contribution, which may include workshop space, installations, and running costs, labour, and transport. These local enterprises will be brought under the umbrella of the climate-smart brand designed for each landscape, and the selling strategy will revolve about the contribution of their products to the conservation of key ecosystem services and the maintenance of ecocultural values in a scenario of climate instability. The project will build on the experience and lessons learned developed by FAO in the framework of the project “Support to Women's cooperatives and associations in the agri-food sector of Lebanon”.

214. Upgrading tree nurseries for the production of climate-adapted seeds and seedlings: the maximum amount that may be requested is USD 37,000 to cover the costs for the upgrade/expansion/adaptation of existing tree nursery that have been identified at project design, to ensure that they meet the quantitative and qualitative needs of the project in terms of seed and seedling supply. Grant funding will cover the following type of expenses: nursery infrastructure and watering system, seedbeds, seedling containers, cold frames, shading mesh, permeable mesh, refrigerator, laboratory equipment for see quality control, substrate, organic fertilizers and phytosanitary treatments, nursery tools and materials, business planning and marketing staff cost. The beneficiaries of the grants will contribute an average of 25 percent in-kind contribution, which may include additional space for the nursery, running costs, labour, and transport. The nursery experts of the task force will help the beneficiaries to develop production plans, including (i) protocols for the identification of populations with genetic diversification and collection of seeds of native species such as aromatic shrubs, sumac, pistachio, almond, plum, pear, apple, and local varieties of species such as vine, fig, jujuba, pomegranate, cherry, almond, walnut; (ii) protocols for analysis of viability, classification, storage and seed treatments; (iii) seedling, rootstock and grafting production protocols; (iv) protocols for nutritional and water hardening of seedlings; (v) protocols for storage, transportation and planting of reproductive material in the plantation areas. Having in mind the objective of making the reproductive material available to the farmers from Y2, the PMU will organize information sessions and will announce the call for grants for the tree nurseries in the first quarter of Y1. It is estimated that the nurseries will produce an average of 22,000 seedlings/nursery/year as of the spring of Y2, with the capacity to cover the needs of climate- adaptive seedlings for at least 100 hectares by the end of the project.

215. The selected applicants will commit to use the funds of the grant for the planned climate-smart production actions and to contribute the in-kind contribution defined in the contract. The contract will define a gradual payment system conditioned to the acquisition of the necessary equipment and inputs and the implementation of the established steps regarding the targeted businesses. Preference will be given to applicants who have followed the training courses under Output 1.1.3, although all beneficiaries who are eligible and meet the selection criteria may apply.

216. Once the contracts are signed, the experts of the task force will organize 2-days local workshops for the grantees - including field visits to existing factories and cooperatives – to introduce the project objectives linked to climate-smart local businesses and marketing and agree on a joint work plan for the next years of the project. The project grantees will receive technical support throughout the project to ensure the development of viable business plans, as well as the managerial capacity of the enterprise members, compliance with social, labour, environmental, climate-proof and quality criteria in the production, processing, and marketing steps. The experts of the project task force will provide continued technical assistance and refreshment of the knowledge provided in the training program (Output 1.1.3) through periodical field visits, online and WhatsApp info exchanges.

217. The international experts involved in the project will carry out two yearly visits throughout the last three years of the project, while national experts will pay four visits per year to the beneficiaries of the grants. The PMU will assist the experts in organizing trips and field visits. The experts will develop the content of written and graphic materials, as well as short videos, to guide the enterprise activities, that will be printed and hosted on the project website.

218. Overall, the grants’ scheme for small local businesses under Output 2.2.2 will count on a total budget of USD 786,000. It is estimated that an average of 18 grants will benefit at least 1,872 people. The first call for applications will be advertised towards the beginning of Y2, so that the first batch of grants can become operational at the start of the production season of the same year. A second round of applications will happen in early Y3, to capture new proposals and ideas that pop up as the capacity development program unfolds.

Component 3: Climate-resilience assessment, knowledge management and awareness raising

219. Component 3 will ensure that awareness of project objectives and activities is spread through international, national and local channels and that the knowledge generated and lessons learned are analysed, understood, and used to develop tools and materials catering to appropriate audiences, including researchers, decision- and policymakers, territorial managers, land users with different levels of literacy, education centres and the general public. Stakeholders mobilized under Components 1 and 2 will also be focal targets of Component 3, as they will be enabled to assess

the co-benefits of climate-smart interventions, and best practices and lessons learned from project recipients will be widely captured and disseminated.

Outcome 3.1. Project practitioners enabled to assess co-benefits of climate-smart landscape interventions

220. This Outcome consists of the development of protocols and tools for the project beneficiaries to self-assess the effectiveness of the climate-smart interventions implemented under Component 2 in terms of climate-risk reduction and co-benefits generated. The tools will be designed by the project team, and the beneficiaries of the different interventions will be trained by the experts of the task force in the use of these self-assessment protocols and tools, so that they understand at what stage of progress they are and if they are on track, if and when technical assistance and advise are needed, and to what extent their practices are actually generating the co-benefits that are being sought.

Output 3.1.1. Protocols and tools for self-assessment of impacts and co-benefits of climate-smart interventions developed and applied by project practitioners

Table 19. Summary of planned activities

• Development of protocols and tools for the self-assessment of the effectiveness and multiple benefits as a result of climate-smart restoration, NRM, production and green businesses. • Training of project beneficiaries and partners linked to the different climate-smart interventions on the self-assessment protocols and tools. • Provision of continuous technical support by TEF – periodical field visits - to all practitioners in the effective use of the self-assessment tools. • Collection and analysis of the self-assessment information and results as part of the project M&E plan.

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221. The close interdependence between the ecological, social, and cultural resilience of the socio- ecological systems that characterize rural landscapes means that a significant alteration in terms of resilience of one of these three terms of the equation may have a cascade effect on the others, causing an acceleration of the negative effects of climate change. The task force of experts of the project will help develop a set of protocols and tools to measure the extent to which climate-smart interventions are generating environmental, social and economic co-benefits, thereby contribute to achieving the desired increase of resilience.

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222. In the first half of Y1, the experts hired to provide assistance to the beneficiaries on the different types of interventions will develop a set of protocols and tools for the self-assessment of the effectiveness and multiple benefits produced as a result of the adoption of climate-smart uses and management practices in agriculture, forests, bioenergy, water, agro-biodiversity, etc. This exercise will be facilitated and coordinated by the Monitoring & Evaluation Specialist and Gender & Capacity Development Specialist of the PMU. These protocols and tools will be based on existing materials already applied by other projects[110] in the target landscapes. Special attention will be given to: (i) the computer-based integrated management effectiveness tool[111] (IMET) for participatory self- evaluation (IUCN contribution to the Bioconnect project) that provides applications for in-depth analysis, strengthening planning and monitoring efforts to improve conservation outcomes, allowing assessment of performance over time and comparison at protected areas system level; (ii) self- assessment monitoring tools for regenerative agriculture producers already applied in pilot farmland plots in the development zone of the SBR; (iii) self-assessment forest landscape restoration monitoring tools already applied in pilot restoration and forest management interventions in the SBR.

223. By mid-Y1, a kit of self-assessment protocols and tools will be available for each intervention type, addressing key managerial, environmental, social and economic topics, and taking into account gender specificities. The protocols will consist of a set of toolboxes, describing a number of key topics, and providing several answer options, depending on whether the practitioner has addressed the topic or not, and what specific action has been taken and/or result obtained. The tools will consist of simple tables and diagrams that the practitioners will fill out at the beginning of the action and periodically - the frequency depending on the type of intervention - throughout the implementation process. The following figure provides an example of the tool that was used by farmers to self-assess their transition towards biodynamic agronomic production system in the Shouf Biosphere Reserve:

[110] Self-certification materials on biodynamic agriculture used by farmers in the framework of the STONE project; biodiversity monitoring materials applied by scientists and the SBR and MHR protected area managers in the framework of Bio-connect project; forest/agriculture restoration monitoring materials applied in pilot sites by the Mediterranean Mosaics and EU/ENPI projects in the SBR; the Index for high biodiversity value forests used by the MedForVal Mediterranean network of forest sites, included the SBR.

[111] Hockings, M., Stolton, S., Leverington, F., Dudley, N. and Courrau, J. (2006). Evaluating Effectiveness: A framework for assessing management effectiveness of protected areas. 2nd edition. IUCN, Gland, Switzerland and Cambridge, UK. xiv + 105 pp.

16. Example of climate-adaptive agro-ecological transition self-assessment tool

Climate-smart Agro-ecological Transition Self-assessment Tool										
Beneficiary Name									Initial Stage	Transition Stage
Transition process		No-action		Path of Change			Final Goal		(Date)	(Date)
	Topic	-2	-1	1	2	3	4	(assign colour)	(assign colour)	
Toolbox- 1: Cultivation Techniques	Crop rotation	(what)		(What)			(What)			
	Crop diversification									
	No/reduced till									
	Water use									
	Other…									
Toolbox 2: Fertility	Fertilizers									
	Soil conservation									
	Weed management									
	Others…									
Toolbox 3: Pest & Diseases	Biodynamic package									
	IPM									
	Others…									
Toolbox 4: Environment	Soil water									
	Soil microbiota									
	Diversity of crops									
	Cover crops									
	Farmland habitats									
	Avoided frost damage									
	Avoided heat damage									
	Waste management									
	Others…									
	Species/breeds									

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Toolbox 5: Animal factor	Apiculture								
	Manure								
	Others…								
Toolbox 6: Human factor	Employment								
	Income								
	Involvement of tourism								
	Collaboration								
	Market links								
	Learning								
	Food security								
	Gender								
	Others…								

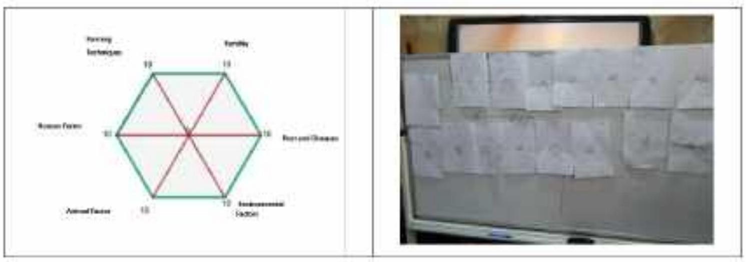
224. The tool is for individual use by each beneficiary. The first two columns contain information about the different topics to be evaluated for each thematic Toolbox described in the protocols. The central columns have a gradation of colours, from red (no action) to intense green (completion of the climate-smart objectives of this type of intervention). In the penultimate column, the beneficiary assigns a number (in the example from -2 to 4) to each cell, indicating the state of development of each topic at the start of the action. For the topics in which progress has been made at the time of each self-assessment round, the same beneficiary will indicate in the last column a number, writing information about the action/no-action carried out.

225. Specific self-assessment materials will be developed by the task force of experts, with inputs from the monitoring and gender specialists, for each type of climate-smart intervention, with thematic toolboxes addressing key environmental, managerial, social and economic topics and user-friendly tools, avoiding gender inequality or stereotypes. During the training program for the project beneficiaries (Output 1.1.3) the task force of experts will introduce the self-assessment protocols and tools as a fundamental element for the periodic verification of the effectiveness and co-benefits of the implemented actions and the progress towards an effective adoption of resilient productive systems.

226. Every half year and coinciding with field visits by international experts, the beneficiaries will be supported in using the self-assessment tools in each type of intervention, to evaluate the state of progress, the problems faced, and propose solutions to overcome the problems and advance the transition process towards a complete acquisition of the climate-smart management model.

227. On the last year of the project, the task force of experts, together with the monitoring and gender specialists, will organize workshops in each landscape with the beneficiaries, to assess their self- evaluation experience and discuss their vision and opinion on methods and techniques applied, the results obtained in each thematic area in relation to the final state of completed transition, the challenges and difficulties faced, and recommendations to improve the areas in which beneficiaries have had more difficulties. To facilitate analysis and discussions, the experts will develop tools, such as the example of diagram in the figure below that was used in the final evaluation of the biodynamic agriculture pilot program in the Shouf region, indicating progress made by individual farmers for each priority thematic area.

Figure 17. Self-assessment diagram and farmers' results on biodynamic agriculture pilot interventions in the Shouf region



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228. The workshop facilitators will propose to the beneficiaries who have given the most positive feedback that they keep on using the self-assessment tools beyond the life of the project. The staff trained as trainers from the organizations that manage the protected areas - ACS for the SBR, Mount Hermon NGO for the reserve of the same name; B-West for the Ammiq reserve- will commit to pay periodic visits and guide the beneficiaries in the process of adopting climate-smart practices in at least the next two years after the completion of the project.

229. The information provided by the project beneficiaries in the intermediate and final self- assessment results will be collected and analysed by the monitoring specialist, with the support of the task force of experts, as part of the monitoring and evaluation project described in section D of Part III of the project.

Outcome 3.2. Project practices and lessons learned disseminated through awareness raising and knowledge exchange at the national and international levels

230. The component will also promote the dissemination of best practices to support climate-smart interventions across the landscape and at a regional/global level through networks and forums in the Mediterranean region and elsewhere, leveraging formal and informal networks of which ACS and the SBR are active members, including MedForVal[112], the Alliance for Mediterranean Nature and Culture, the Collaborative Partnership on Mediterranean Forests, etc. At the global level, IFAD will also draw on its participation to restoration networks such as the United Nations Decade on Ecosystem Restoration, UNFCCC COPs, and the annual World Conference on Climate Change and Sustainability.

Output 3.2.1. Awareness raising programme designed and implemented at the landscape and the national levels, using media tools and social opportunities

Table 20. Summary of planned activities

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• **Design and implementation of an awareness program** tailored to the social fabric of the target landscapes, including: the organization of events in municipalities, social media and podcasts, participation to local festivals and special food & ecotourism market events, organisation of extracurricular activities for children, collaboration with local artists and art or cultural groups.

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231. The PMU, in collaboration with the main partners, will design an awareness programme tailored to the social fabric of the project area, to position the high value ecocultural landscapes as a place where positive change and better living conditions can materialize, in a climate-resilient way and with a positive, constructive, and peaceful approach. Specific stories of success in climate resilience achieved by women beneficiaries, and promotion of climate-smart products, values and quality linked to women's initiatives will be identified and promoted. This output will build on the extensive experience of ACS on communication, awareness raising and education, but it will also draw from the experience and the specific cultural features of the area, which will be collected through interaction with the local society. The activities are likely to include: the organisation of events in municipalities, social media and podcasts, the participation to local festivals and special food & ecotourism market events, the organisation of extracurricular activities for children, and the collaboration with local artists and art or cultural groups (drama, music, sport, food etc). Another awareness tool of the project will be a web page featuring a visual platform for sharing data/knowledge in the form of an interactive map showing the managed sites, stories from local champions involved on nature-based solutions, project progress, etc. The page will be hosted at the website of ACS and other collaborating agencies/institutions.

Output 3.2.2. Lessons learned and best practices disseminated

Table 21. Summary of planned activities

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• Organization of learning visits for project beneficiaries and partners to regional nodes of excellence on climate-smart ecosystem restoration and rural development models. • Participation to international events relevant for resilient landscapes and livelihoods to share project results, promote future collaborations and position the project region and Lebanon as an example and node of expertise in building climate resilience at the landscape level.

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232. The good practices and lessons learned by the project will also be conveyed through a set of community-level lesson learning workshops, where small-scale farmers, shepherds, forest managers, and entrepreneurs, as well as local communities will present progress, challenges faced, and lessons learned. The workshops will prioritize the concept of "women talking to women", identifying women entrepreneurs or farmers with valuable experiences to share with other women. The best "stories of change" will be selected, and they will be featured at national and regional fora and broadcasted with the help of the media.

233. Knowledge exchange activities will be executed through regional partnerships and South-South and Triangular Cooperation (SSTC). This includes learning visits for project beneficiaries (involving at least 30% women) to regional

[112] Mediterranean Network of High Ecological Value Forests

nodes of excellence on gender-responsive climate-smart nature- based solutions and DMO marketing initiatives, and the dissemination of the project best practices through existing cross-Mediterranean networks, including MedForVal and the Collaborative Partnership on Mediterranean Forests[113], of which the SBR is an active member. IFAD's engagement with the UN Decade on Ecosystem Restoration will create opportunities to scale up and replicate results and lessons learned emerging from the project activities, while also learning from similar initiatives. Building on experiences of IFAD funded investments in climate-smart agriculture, livestock production and adaptive management both globally and regionally, South- South and Triangular Cooperation study tours and exchanges will be supported.

B. Project Benefits

234. The **overall benefits** of the project include:

- **Strengthened landscape resilience to climate risks**. The project has prioritized high climate-risk areas in the three target landscapes will identify and map high climate-risk areas in the three target landscapes covering a total area of 42,058 hectares and prioritize climate-smart interventions in terms of management practices, land uses, and land use distribution patterns. Twenty municipalities and their estimated population of 46,860 people will benefit from landscape-level interventions on high fire risk reduction, whose assets will be better protected with a lower probability of large-scale fires, and who will be prepared for a better rapid response in the event of fires. The intervention priorities will be mainstreamed into the management plans of the SBR and Mount Hermon Reserve, as well as into the strategic planning of the municipalities and municipal unions in the target landscapes.
- **Greater adaptive capacity**. 155,836 inhabitants from the rural communities in the target area and the many visitors of the nature reserves, will gain a greater awareness on climate resilience. Learning, knowledge and adoption of climate-smart ecosystem restoration, sustainable natural resources management, production systems and local businesses and marketing strategies for the produced commodities will reduce the climate vulnerability of approx. 566 smallholders. The diversification of production systems, based on climate-adapted crop species and varieties and efficient and equitable use of water, will increase their food and economic security. Based on past experiences and lessons learned, the project has calculated that the climate-adaptive bioenergy production will entail the availability of enough briquettes in the local market to allow the shift of approx. 1,000 households from diesel to biomass cooking and heating, thereby reducing the economic cost and health problems caused by the use of fossil fuel.

235. **Social benefits**:

- **New employment opportunities** for 274 people, of which at least 30% women and 30% young unemployed who have acquired vocational training in new jobs with high social demand.
- **Enhanced food security** thanks to on-farm production of a diversified set of products from climate adapted local crop species and varieties and livestock, as well as the harvesting of more abundant and diverse NTFPs and beekeeping products resulting from ecosystem restoration and biomass management interventions.
- **Increased equitable access for women and men to water, energy, production tools, inputs and funding**. The project will give special support to women through training and coaching that support the acquisition of skills to facilitate access to water, production equipment and inputs, and to create local businesses, access financing, and improve product marketing.
- **Strengthened social cohesion**. The project will support at least 18 local businesses and cooperatives - especially women cooperatives - as well producer groups of forest, farm and shepherd users, to carry out collaborative and consensual management of natural resources.
- **Increased awareness and knowledge**. Training and on-farm learning sites will increase land users' knowledge on adaptive management in the context of climate change. Users will be more aware of the impacts of maladaptive agriculture, forestry and pastoral practices and be in a better position to respond to climate change.

236. **Economic benefits**:

- The project will help develop a minimum of 18 **climate-proofing local business** on diversified raw and processed commodities, mainly targeting small local factories on bioenergy products, compost, and waste treatment, tree nurseries, food processing and tourism-related food shops. All businesses will develop business plans with sustainable economic return on investments.
- **Diversified production and processing systems** will help increase the economic security of vulnerable rural households, who will be able to split a percentage of production for income generation and the rest to cover food security needs.
- Three **landscape platforms** (DMOs) will support producer organizations, women cooperatives and enterprises to market their products, based on a climate-smart brand-marketing strategy, local farmers' markets and physical/only linkage between VC actors and consumers. The development of **brand marketing strategies** will add economic value to the climate-smart additional value of high-quality products and help diversify market segments. Well **organized producer groups and collaboration agreements** with value chain actors, will help reduce production costs, open access to new marketplaces and segments, and increase net profit margins.
- **Reduction of the smallholder households' energy-related expenditure** by more than two thirds in comparison

[113] https://www.fao.org/forestry/43926-0da0daf97010af0c98cce660f15273b8.pdf

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with fuel – the main energy source in the local households – with a positive effect on the consumption and savings of the local population.

237. **Environmental benefits:**

- 908 hectares of climate-smart crop production systems will help **increase farmland habitats and species diversity** in/around farmland plots, increasing ecosystem services, such as pollination, pest control, heath soil conditions, hydrologic regulation, microclimate, among others.
- 690 hectares of forestland and pastureland restored and under integrated management practices will help **reduce the occurrence and spread of wildfires**, reduce the impact of floods in farmland areas surrounding water courses in the Litani floodplain, and enhance the ecosystem services of silvopastoral ecosystems.
- Avoidance of synthetic agrochemicals in C-smart farming systems, agriculture and livestock waste management for bioenergy and compost, and the use of green filters (phytoremediation through the planting buffers with hygrophilous plants, such as reeds, willows, poplars, etc.) in key areas will help **reduce soil and water pollution**.
- **Hydrologic improvement** such as runoff water harvesting, rainfall water infiltration, soil water storage and regulation, and avoidance of soil water evaporation, through climate-smart farming practices, such as no/reduce till, cover crops, the use of living and dead mulches, agroforestry planting of hedges and wind breaks.
- **Restoration and sustainable use of the wide range of native habitats and plant species** in the SBR and Mt. Hermon Nature Reserve, including wild crop relatives (e.g. cereals, pulses, *Prunus spp., Pyrus syriaca, Pistacia palaestina, Rhus coriaria*), local crop varieties, wild useful plants (e.g. *Pinus pinea, Quercus calliprinos, Cedrus libani, Origanum syriacum, Thimbra spicata, Gundelia tournefortii, Asparagus acutifolius,* etc.), farmland habitats/species supporting pollination and pest control, etc.
- **Restoration of dry-stone wall terraces in critical areas** of the landscape (e.g. high fire risk areas) to help **regain a more resilient mosaic-like structure**, increase flora and fauna diversity linked to stony habitats, and provide key services in terms of fuel-break areas, hydrologic regulation, and soil conservation.

C. Cost Effectiveness

238. All proposed actions aim to meet the objective to restore resilient landscapes and livelihoods to climate risks in the most cost-effective way. The proposed project interventions around the targeted value chain commodities (e.g. briquettes and pellets; compost; NTFPs and other food products) are based on economic and financial analysis that were prepared in the framework of past pilot interventions in the Shof Biosphere Reserve that have demonstrated sustainable return on investments.

239. **Benefits**. The main sources of benefits are the following: (i) the farmers' incremental benefits due to the increase in agricultural and livestock margins caused by production diversification, increased availability of ecosystem services (soil fertility, soil water content, pest control and pollination services), and reduction of production costs (less machinery and inputs needed); (ii) the incremental benefits of the added-value initiatives that are linked to bioenergy and compost production; (iii) increase in households' savings margin due to the lower cost of energy and the increase in the percentage of production destined for the market; and (d) the increased profits of farmer's due to the new farmers' market places and a diversified brand marketing strategy facilitated by the DMO platforms.

Table 23. Briquettes' factory business plan[115]

Business plan for one briquettes' factory							
Year	Briquettes t/yr	Briquettes N°/yr	Forest wood chips (t/yr)	Olive/fruit tree wood chips (t/Yr)	Olive pomace (t/yr)	Total raw material	Expected net benefit (USD 50/t)
Y1	1.200	1.000.000	357	238	800	1.395	60.000
Y2	1.489	1.241.000	443	295	993	1.731	74.450
Y3	1.848	1.540.081	513	403	1.232	2.148	92.400
Y4	2.293	1.911.241	591	546	1.529	2.666	133.300
Y5	2.846	2.371.849	677	734	1.898	3.309	142.300

[115] Regato, P. 2020. Forest and Landscape Restoration Guidelines: Regaining Landscape Resilience, Ecological Functionality and Human Well- being. The Shouf Biosphere Reserve. Hani, N., M. Pagliani & P. Regato Editors. Lebanon.

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Table 22. Project indicators and targets¶
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Y6	3.532	2.943.465	771	981	2.354	4.106	176.600
Y7	4.383	3.652.840	869	1.303	2.923	5.095	219.150
Y8	5.440	4.533.175	971	1.726	3.627	6.324	272.000
Y9	6.751	5.625.670	1.071	2.276	4.501	7.848	337.550

240. Previous interventions undertaken by ACS and other partners in the SBR have demonstrated sustainable return on investments linked to nature-based solutions that contribute to climate change adaptation and mitigation. For instance, agriculture and forest biomass management in pilot sites with the objective to reduce agriculture waste burning, while creating new income generating opportunities (briquettes and compost factory and new jobs) have demonstrated to be cost-effective compared with business as usual or no action.

241. The project has budgeted the cost of investment in climate-smart interventions for restoration, ecosystem management, agricultural production and small businesses linked to the target commodities, based on real data from pilot experiences implemented in the target landscapes. The investment plans have made an estimate of costs and sustainable return in economic, social and environmental terms, based on real data from analysis of value chains of diversified productions in the Shouf reserve[116].

242. So far, the following preliminary cost-effectiveness estimate in qualitative terms of alternatives proposed in the Concept Note can be summarized:

Table 24. Cost-effectiveness estimation and alternatives to project

Component	Total costs (USD)	Beneficiaries	Benefits generated – Losses averted	Alternative to project
Component 1. Capacity development and policies for resilient landscapes and livelihoods.				
Outcome 1.1: Local beneficiaries empowered to adopt climate-smart nature resource management, agriculture production, and marketing through capacity development	352,734	90 extension providers (30% women). 454 trained farmers, shepherds, forest users and managers (30% women).	The project will build the capacity of public and private extension providers on climate resilient management systems and technologies, with the aim to have a critical mass of service providers to train and educate farmers, forest users and managers, and the rural communities in the target landscapes on more efficient and climate resilient systems and techniques. Additionally, the trained extension providers will provide continuous coaching to the project beneficiaries to accompany them in the complex transitional process from the use of maladapted practices to climate-adapted ones. The risk of abandonment in the adoption of adaptive systems and techniques is high in the first 2-3 years of implementation, since until favourable conditions have been regenerated (e.g. soil fertility, regulation and storage of water, farmland habitats providing ecosystem services) farmers may have irregular production and need ongoing technical help to face unexpected problems and	Alternatives to project with regards to knowledge and learning on climate resilient systems and techniques are to pursue the business-as-usual scenario, which entails maintaining an absence of sufficient extension personnel trained in applied knowledge about climate-smart systems and technologies, and therefore the absence of training and technical assistance opportunities for land users. The same land users consulted during the design of the project, as well as the analysis of the capacity development needs of Lebanon's 4th Communication to the UNFCC and 2021 Nationally Determined Contribution, define the problem of lack of extension and training of users as one of the main barriers in achieve adaptation objectives for the agriculture and forestry sectors.

[116] Sleem, K., Redwan, Z. and Assi, M.B. (2020). Value chains in Lebanon's Shouf Biosphere Reserve. Cultural landscapes and biodiversity in the Mediterranean Basin. Washington, DC: IUCN.

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			identify solutions.	
Outcome 1.2: Climate-smart policies and regulations adopted by the municipalities and protected area authorities of the landscapes.	82,500	Civil servants of 36 municipalities and staff of the 3 entities managing protected areas (ACS, MH Organization, B-West)	The project will provide municipal staff and protected area management organizations with the necessary capacity to formulate and enforce regulations and ordinances that define what can and cannot be done to ensure the application of climate- smart systems and practices in the land uses of the municipalities and the whole landscape.	Alternatives to project with regards to knowledge and learning on climate resilient systems and techniques are to pursue the business-as-usual scenario, which entails a lack of local policies that allow regulating resilient land uses and practices. This makes it difficult for both users and those who have to control what is being done in the territory to have a frame of reference to guide their actions and report abusive uses.
Component 2: Nature-based solutions for environmental, social, and economic sustainability				
Outcome 2.1: Ecosystem restoration and adaptive agriculture solutions implemented in critical climate risk areas of the landscapes.	1,643,558	Approx. 46,860 people from 20 municipalities (50% women). 200 households with small farmland plots in the Litani basin with high flood risk benefit from freshwater restoration protective measures. 60 households involved in livestock management benefit from silvopastoral restoration interventions. 90 households applying regenerative agriculture techniques.	The project will support integrated biomass management to be applied in critical high-fire risk areas of the landscapes. The people of the municipalities concerned, will benefit from avoided large wildfires and will aware and capacitated to organize themselves and apply safety measures and protocols for evacuation. The project will support freshwater restoration in degraded banks of water courses surrounded by smallholder farmland plots. This will provide a benefit to the productive activities and security of the owners of these lands, thanks to better water regulation and infiltration of heavy rainwater that are increasing with climate change, in addition to the contribution of other ecosystem services (microclimate, soil nutrients, NTFPs) that make productive systems more adaptive, and an improvement in biodiversity and the need for species migration along river corridors. The restoration and application of climate-smart management measures in pastures and agricultural fields of the project beneficiaries will reduce climate risks (e.g. increased loss of soil, fertility, and water retention due to greater droughts, heat waves and torrential rains; reduction or loss of crops and pastures due to increased thermal extremes and lack of water at critical times; heat stroke of livestock due to lack of water and shelter) and will improve the regularity, quality and quantity of a more diversified production over the years. This	Alternatives to project with regards to investments in climate resilient systems and techniques are to pursue the business-as-usual scenario, which entails that: (i) municipalities, their people and assets, have an increasingly high risk of large scale wildfires, due to an accumulation of increasingly unmanaged dry biomass, combined with increasingly extreme weather conditions - extreme heat, strong winds, minimal relative air humidity - with high probability of large socio- economic and ecological losses. (ii) farmers, their assets and production systems in floodplain areas, have an increasingly high risk of possible increasingly frequent floods, with a high probability of large socio-economic and ecological losses. (iii) farmers and shepherds in general have irregular and lost production due to a lack of knowledge and technologies that defend them from increasingly frequent and intense climate risks, with greater food and economic insecurity, and risk of abandonment of crops. land and emigration out of the region. Business-as-usual scenario will lead to an increase in the climatic vulnerability of social- ecological systems, accentuated by the

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			will have a very positive impact in terms of food security and economic security, thanks to a greater capacity of smallholder farmers to ensure their basic needs and allocate a greater part of production to marketing.	maintenance of maladaptive practices or absence of management, resulting in a strong reduction of ecosystem services and the consequent reduction of agricultural, livestock, NTFP, wood production and income. Likewise, the business-as-usual scenario will lead to an increase in GHG emissions and losses of property, human life, natural resources and biodiversity due to the greater probability of devastating fires and extreme droughts.
Outcome 2.2. Innovative marketing strategies and value chain improvement measures adopted for key products and services in the landscapes.	1,215,000	566 beneficiaries (50% women) are involved in climate-proof business and brand marketing strategies and become members of landscape marketing platforms promoting climate-smart goods and services. Approx. 1,000 vulnerable households reduce energy costs and improve in-house healthy conditions through the use of bioenergy products.	The project will support local business development based on the production, processing and marketing of green products from climate- smart management systems and productive activities. Likewise, companies, cooperatives and organizations will be supported to develop governance systems, viable business plans, social, environmental and quality standards, and climate-proof production systems, which make them more resilient to climate shocks. The project will support existing promotion and marketing platforms that support producers of local goods and services linked to the natural and cultural heritage of the protected areas concerned, promoting the participation of project beneficiaries in them. The project will promote a branding marketing strategy that values, advertises and promotes the climate-smart added value of the goods and services produced for consumers.	Alternatives to project with regards to investments in climate- proof local green businesses and climate-smart brand marketing strategy, are to pursue the business-as-usual scenario, which is solely based on the current branding and marketing program of ACS, which is limited to a restricted number of products. The marketing work of the project will cover a wider range of products, thus generating higher benefits.
Component 3: Climate-resilience assessment, knowledge management and awareness raising				

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Outcome 3.1. Project practitioners enabled to assess co-benefits of climate-smart landscape interventions	84,992	725 beneficiaries (30% women) have learned and apply self-assessment monitoring tools.	The actions of this outcome of the project seek to respond to the government's objective in terms of "enhanced capacity to facilitate systematic collection of information from stakeholders to enable tracking the progress of implementation of climate change actions in all sectors". Following self-assessment approaches and systems supported by international partners (e.g. IUCN IMET system, Biodynamic self-assessment protocols; IBP index for forest management), the project will train beneficiaries (landowners and land users, land and PA managers) in the use of self-assessment systems and protocols, and It will be accompanied by continued technical assistance throughout the years of the project to learn its use and long-term adoption. The results obtained will be integrated into the project monitoring system and shared with the government.	Alternatives to project with regards to practitioners' capacity to assess co-benefits of climate-smart interventions, are to pursue the business-as- usual scenario, which entails that landowners and land users will have difficulty understanding to what extent their practices provide adaptation improvements, with the risk of abandoning them. Furthermore, the cost-effectiveness provided by self-assessment monitoring protocols and tools will be lacking, with a high probability of not being able to capture sufficient data on CC adaptation indicators in the long term, and thus not being able to feed national monitoring databases to improve policies and report progress to international agreements.
Outcome 3.2 Project practices and lessons learned disseminated through awareness raising and knowledge exchange at the national and international levels	208,361	155,836 people (50% women) are aware of the project interventions and results.	The project will invest in the development, publication and dissemination of a varied set of materials based on successful results in the target landscapes, which will be available to a diversified audience at a local, national and international level. The project will support learning visits and exchanges at various levels (between actors from the target landscapes, with actors from target landscapes of other complementary projects in the country, peer-to-peer exchanges with practitioners active in resilient landscape actions in the Mediterranean countries and elsewhere) that will promote cross- fertilization to help integrate complementary CC adaptation approaches and strategies that have demonstrated effectiveness in similar social-ecological contexts. This will facilitate the long-term involvement of project beneficiaries and partners in national and international networks beyond the life of the project.	Alternatives to project with regards to awareness and knowledge management, are to pursue the business-as-usual scenario, which entails the risk that successful results will not have sufficient dissemination to be used by other national and international actors, and that project beneficiaries and partners working on isolation will not have access to successful innovative examples and direct relationship with the individuals or groups that have developed them.

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D. Strategic Alignment

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243. The proposed project is aligned with and contributes towards international environmental conventions to which Lebanon is signatory, the country's national strategies, and the Adaptation Fund's Strategic Results framework.

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244. **MoE. Lebanon Climate Change Adaptation Strategy and NAP Implementation**. The strategy and the NAP aim to mainstream climate change implementation into policies and work plan across the country. The activities carried out by the project are highly relevant to the implementation of the CC Adaptation Strategy and NAP. During the inception phase, the project team will meet with relevant partners at the MoE to establish mechanism for alignment and synergies.

245. **The Lebanon's 2020 National Determined Contribution (NDC) Update**, came at a time when Lebanon is facing economic, financial, monetary, and banking crises which significantly impact economic output, livelihoods, and development. Fighting the climate crisis in Lebanon entails policy and fiscal reforms to increase the energy efficiency of the sector, the sustainable use of land and water resources, the reduction of polluting practices in agriculture, waste, and industry, and enhancing the resilience of communities and infrastructure. The project is consistent with the **Adaptation Priorities 1, 2, 3, 4 and 7 included in the Lebanon's 2020 National Determined Contribution Update**, and contributes to the following key activities:

Table 25. Project contribution to the NDC Adaptation Priorities

Adaptation priority (AP)	Mitigation co-benefits	Most relevant SDGs	Key activities	Project contribution
AP 1: Strengthen the agricultural sector's resilience to enhance Lebanon's agricultural output in a climate-smart manner	Climate- smart agriculture includes GHG reducing measures such as managing quantities and types of fertilizers.	1, 2, 3, 5, 8,12,15	Restore livelihoods and productive capacity of farmers and producers. Encourage private investment along value chains including innovative technical solutions. Increase resilience of households with reference to food and nutrition security.	Plan and implement climate- smart agriculture production systems and efficient water management in high climate-risk areas of the target landscapes.
AP 2: Promote sustainable use of natural resources, and restore forest landscapes, while meeting the ecological, social and economic needs of sustainable forest management.	Forest restoration and adaptive management activities enhance carbon sinks.	1, 8, 12, 15	Adapt forest systems, improving soil and water conservation. Establish sites with improved production capacity linked with wood & NTFP processing industry and peoples' needs in terms of goods and services and employment. Promote sustainable rangeland management. Reduce the risk of fire through prevention measures. Manage pest and diseases outbreaks.	Identify and map high fire risk areas and implement integrated, sustainable biomass management practices involving forest, agriculture and controlled grazing, and local businesses, Enhance multiple benefits in terms of mosaic-like structure with restored agriculture & pastures ad fuel-break areas, higher forest maturity/C stocks and biodiversity, increased NTFP, and higher soil fertility.
AP 3: Structure and develop sustainable water services, including irrigation, to improve people's living conditions	Irrigation using clean energy sources reduces GHG emissions	1, 3, 8, 9, 11, 12, 15	Enhance the efficient use of irrigation water, with renewable energy supply.	The project will upscale pilot automatized efficient irrigation with solar pumping energy to improve water management through water user groups and reduce water needs.
AP 4: Value and sustainably manage Lebanon's biodiversity to ensure equal access to ecosystem goods and services.	Biodiversity management contributes to carbon sinks	2, 4, 11, 12, 14, 15	Sustainably manage 50% of all natural ecosystems and properly consider them in spatial planning. Identify vulnerable ecosystems to CC and develop/implement adaptation plans. Implement rehabilitation plans in at least 20% degraded sites for the sustained delivery of ES.	The project will pursue the production and use of crop wild relative species based on existing CC modelling for forest species and will support their use in climate-smart agriculture. The project will increase the maturity and biodiversity of forest and grassland through adaptive management and ecological restoration interventions.

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246. **National Forest Restoration Program 2015-2028.** In 2014, the MoA began the process of developing the "40 million trees" National Afforestation/Reforestation Program (NARP), which aims at the country's forest cover from 13% to 20% by 2030. In 2015, the MoA launched the first National Forest Program as an instrument for implementing the national forestry policy. Lebanon participates actively in the Global Forest & Landscape Restoration Initiative through different projects including the GEF Salma project[117] and the FLR program led in the SBR[118] by ACS with multi-donor support (MAVA Foundation, EU ENPI, the Italian Gov, private donors, etc.). The project activities on ecosystem restoration are aligned with the priorities defined in the National Afforestation Program, in terms of recommendations and criteria for the production and use of native species and planting procedures. Regarding compliance with the Programs, the only requirement that is stipulated is the submission of a report to the MoA on the forest restoration actions carried out.

247. **National Forest Fire Management Strategy 2009 (updated in 2023)**. The Strategy provides a risk-management framework following a 5-R fire management approach with objectives and outcomes regarding fire **R**isk-reduction, **R**eadiness, **R**esponse, **R**estoration and **R**esearch. The project activities on integrated biomass management for fire risk reduction are aligned with the priorities defined in the National Strategy and adopt the integrated 5-R approach and type of interventions recommended in the strategy. As for the Strategy itself, the need for granting any authorization or clearance is not contemplated.

248. **National Renewable Energy Action Plan (NREAP) 2016-2020**. National Renewable Energy Action Plan aims at achieving "the adoption of a national road map built on modern environmental concepts (green energy) and counting on renewable energy sources to reach 12% of Lebanon's needs". Three main paths need to be developed in order to reach this 12% target (i) wind energy for electricity production; (ii) solar energy, including solar photovoltaics (PV), concentrated solar power (CSP), and solar water heaters; and (iii) biomass. The Plan offers a detailed description of the different RE technologies to be used in Lebanon to meet the 2020 objective, including the target for each technology, the financial appraisal of the technology, the needed budget, and the way forward. The project will ensure that bioenergy production interventions will follow national regulations.

249. **NBSAPs[119].** Lebanon is currently updating its NBSAPs in line with the Kunming-Montreal Biodiversity Framework. In the 2016 NBSAP, climate change resilience, sustainable management and use of natural ecosystems and resources as well as ecosystem restoration are all featured as priority areas. The project is aligned with the following 2016 NBSAP targets for 20230: (i) Rehabilitation plans should be implemented in at least 20% of degraded sites (Target 7); (ii) 50% of all-natural ecosystems to be sustainably managed and properly considered in spatial planning implementation (Target 6); (iii) Government entities mainstream biodiversity priorities (conservation benefits sharing, pressure alleviation, sustainable management, sustainable use of natural resources) into their policy making processes and their implementation (Target 13); (iv) Vulnerable ecosystems to climate change are identified and adaptation plans are developed and implemented (Target 14); (v) Mobilize the private sector to implement plans for sustainable consumption and production to mitigate or prevent negative impacts on ecosystems' carrying capacity through the use of natural resources (Target 16).

250. **Lebanon National Agriculture Strategy (NAS) 2020 – 2025.** The Strategy flags several challenges in developing the agri-food sector, so to make it a main contributor to the achievement of food security, while ensuring sustainable management of natural resources. The NAS is structured around five pillars. The project is especially aligned with Pillar 4: Improving climate change adaptation and sustainable management of agri-food systems and natural resources. Interventions under this pillar include promoting sustainable use of natural resources and increasing CC adaptation through climate smart agriculture techniques such as conservation agriculture, smart planting, afforestation and reforestation.

251. **National Land Degradation Neutrality Targets.** Land degradation has been flagged as a serious environmental problem in Lebanon, resulting in yearly losses estimated at USD 132 million. The Government of Lebanon is committed to combat desertification and land degradation, and has adopted the official 2030 voluntary LDN Targets: (i) Improve land productivity and soil organic carbon stock, in forests, croplands and grasslands; (ii) Improve the mosaic of the landscape, including forests, grasslands and croplands and limit their conversion to other land covers; (iii) Enhance the role of forests and trees in urban and rural areas in providing sustainable products and services. Achieving these targets will require the implementation of the following measures with which the project is aligned:

Table 26. Project alignment with LDN priority measures

National LDN priority measures	Project alignment

[117] https://www.thegef.org/projects-operations/projects/5125

[118] Regato, P. 2020. Forest and Landscape Restoration Guidelines: Regaining Landscape Resilience, Ecological Functionality and Human Well- being. The Shouf Biosphere Reserve. Hani, N., M. Pagliani & P. Regato Editors. Lebanon.

[119] MoE/UNEP/GEF. (2016). National Biodiversity Strategy and Action Plan – NBSAP.

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• Restore forest landscapes through reforestation and afforestation on at least 10,000 hectares. • Implement sustainable forest management practices on all public forests, and promote the sustainable management of private forests, thus reducing the occurrence of forest fires and the conversion of forests into other land-uses. • Restore and manage grasslands in high mountain areas on at least 1,000 hectares. • Promote sustainable agricultural practices on at least 80,000 hectares. • Leverage Land Degradation Neutrality into land-use planning and sectorial policies and strategies. • Develop financial incentives for the implementation of sustainable land management practices, in line with mitigation and adaptation strategies on climate change and conservation of biological diversity. • Promote research on sustainable land management. • Develop partnerships with local, national and international organizations for the promotion of sustainable land management practices.	• High climate-risk areas will be identified and mapped, where to prioritize cross-sectoral ecological restoration and adaptive management interventions on forest, agriculture and grasslands. • Climate adaptive nature-based solutions on forest, agriculture, livestock management, bioenergy and compost production, water management, and agrobiodiversity conservation and sustainable use will be supported by the project. • Financial incentives for sustainable forest, agriculture and livestock management and production will consist mainly of support for green businesses and employment. • Prioritization and implementation of climate-smart interventions will follow a participatory approach, involving all concerned actors, with a major focus on vulnerable population groups.

252. The project is aligned with the **Adaptation Fund's Strategic Results Framework** and directly contributes to the Fund's overall objective and outcomes. Part III, section A provides details on the project alignment with the Results Framework of the Adaptation Fund.

E. National technical standards

253. The project activities will be carried out in full compliance with national regulations and standards on key sectors (e.g. environment, land use, natural resources management, waste management, energy, construction and infrastructure development, labour and occupational safety, etc.), and are not expected to have adverse impacts.

254. Relevant national technical standards required by the Government of Lebanon will be applied, including, among others:

Table 27. National Policy Framework Relevant to Project Interventions

Law 444/2002 on Protection of the Environment	It is the environmental protection framework law, includes the general provisions for the protection of the environment. *Requirements of law 444/2002 shall be adhered to in the development of the required ESIAs/ ESMPs (if any) and project implementation.* *Based on ACS experience and considering none of the works planned under this project are of "complex" nature (not listed in the EIA Decree Nº 8633 Annexes 1 and 2), it is not foreseen that EIAs will be required. The project will nonetheless require confirmation to the MoE on the need for Rapid Environmental Impact Assessments to be conducted if requested by the competent authority (municipalities, water authority).* *The proponent commits to comply with Article 4 of the EIA Decree and will submit an application to MoE inquiring about the classification of each project according to the Screening form together with supporting documents required by the Ministry of Environment. if any project requires an IEE, these will be prepared and submitted to MoE for formal approval.*
Decree No. 8633 (2012)	Environmental impact assessment procedures, issued under the Framework of Environmental Law. It stipulates the EIA procedure and regulations related to all development projects with potential impacts on the environment. *The project activities do not trigger the provisions included in the Decree for projects that that duly require an EIA study (Annex 1) and projects that require an "initial environmental examination" (Annex 2). The project will nonetheless require confirmation to the MoE on the need for Rapid Environmental Impact Assessments to be conducted if requested by the competent authority (municipalities, water authority).* *The proponent commits to comply with Article 4 of the EIA Decree and will submit an application to MoE inquiring about the classification of each project according to the Screening form together with supporting documents required by the Ministry of Environment. if any project requires an IEE, these will be prepared and submitted to MoE for formal approval.*

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Law 130 (2019)	Issued to improve nature conservation processes and procedures; it classifies protected areas into 4 categories; it also outlines management and financial processes and procedures. Law 130 has set advancement at the level of creating nature reserves on private lands with providing the necessary regulations. There are specific laws on the creation of protected areas close to the project intervention areas: Law 523 (1996) for the creation of Al-Shouf Cedar Nature Reserve; Law 202 (2020) for the creation of Mount Hermon Nature Reserve. The *the Protected Area Committees supervise the work of the management teams, ensure the proper implementation of the management plan and budget, and reports regularly to the Ministry of Environment.* *The Project activities shall consider the existing protected areas (Shouf Biosphere Reserve with its core zone - Al-Shouf Cedar Nature Reserve - transition zone and development zone; Ammiq Ramsar Site; and the Rashaya area which is candidate to become a new biosphere reserve, including Mount Hermon Nature Reserve as its core zone) and follow the existing planning tools to ensure that the proposed adaptation activities are aligned with the defined priorities and recommended guidelines.* *The proponent will share with the Protected Area Committees all relevant information about the planned project activities to be validated and supervised by the Committees. This is ensured by the integration of the Protected Area Committees into the project implementation arrangements (see Part III, Implementation Arrangements).*
Forest Law	Laws and regulations that govern the forest sector in Lebanon are limited in scope, and administrative regulations are issued according to specific needs and sites. 1949 Forest Law that outlines the forest management and protection, and regulates forest activities including grazing, pruning, coppicing, thinning and charcoal production, is still in effect today. Law 85 (1991) imposed severe restrictions on forest activities (namely harvesting/cutting restrictions and protection of conifer forests) to preserve the remaining forests after the long-armed conflict. The forest law was amended in 2000 (Law Nº 195) to include criminalization of illegal operations and acts. Penalties are in the form of fines or/and imprisonment. Decision No. 705/1 (11/8/2012) and its amendment Decision No.322/1 (2014) and Decision No.731/1 (2012), set several rules and procedures to organize cutting, exploitation of forests, other wooded land and trees outside forest, and define the requirements for issuing licenses for forest cutting trees for the purpose of rehabilitation and reclamation. *Project activities shall adhere to the requirements of the law.* *The Project activities shall comply with the decision rules and procedures to organize thinning and pruning operations and licensing. The proponent (jointly by the municipality and/or private entity and the PMU) shall request a permission for the proposed thinning and pruning interventions from the M. of Agriculture defining where, property rights, affected surface and vegetation type. Staff from the local forest centers will pay field visits to check the area before granting the permit and during/at the end of the executed works.* *As for the project's grazing management activities, if they take place on public land, beneficiaries must participate in annual auctions of grazing areas established by municipalities in collaboration with local forestry centres.* *The PMU and/or any public and private actor linked to the project shall inform local forest centres (representing the MoA locally) providing evidence of any illegal activity occurring in the forests and pastureland in the target areas. The forest centre staff will prepare reports on proven violations and those responsible, to be sent to the courts and/or to apply the penalties established by law.*
Decree 2366 (2009) on The National	The Decree with the prescription of environmental management standards of delineated areas of ecological and cultural importance.
Physical Master Plan of the Lebanese Territory,	Part II deals with provisions related to the urban planning, in particular: classification of lands into urban, rural, agricultural and natural resources; cedar mountain chain; forests and valleys; archaeological sites; areas prone to flooding; landslide areas; and areas at risk of groundwater pollution. *The project shall respect the maps and guidelines for permissible land-uses developed by the SBR authority and submitted to DGUP through the MoE, before planning climate-smart interventions in the designed high-climate risk areas. The new cadastral maps of land tenure and tenure rights are located in the offices of the protected areas management organization (ACS), which is the same institution implementing the project. The project does not include any civil construction that may require cadastral verifications. Regarding potential grant beneficiaries, the PMU will conduct a review of the cadastral maps to verify that grant funding applications are aligned with the land use rights established in the cadastre for the land*

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	polygons involved in the buffer and development zones of the nature reserves.
Organic production regulation law Nº 158 (2020). The national adaptation of the IFOAM- Organics International standards, EU standards and the Codex Alimentarius Commission guidelines.	The organic production system of Lebanon is designed with the aim of achieving the following (i) promotion of biodiversity; (ii) increasing the biological activity of the soil; (iii) maintaining soil fertility; (iv) making use of non-polluting waste of plant and animal origin to reduce the use of non-renewable resources; (v) promoting reliance on renewable resources in local farming systems; (vi) encouraging the correct use of soil, water, and air; (vii) establishing it on any existing farm through a transition period whose duration is determined according to elements related to the site (history of the land, type of crops, animals raised). The provisions of this Law are subject to the production, manufacture, sale, import and export of agricultural products that bear, or are prepared to carry, on their packages data indicating that they are organically produced. *The project will ensure that all produced organic products by project beneficiaries will follow national regulations. Any action by project beneficiaries aimed at obtaining organic certification will be directed directly to the private certifying body currently operating in Lebanon.*
Decision 307/1 24/6/2010 Regulation of the import and registration of bio-pesticides in Lebanon.	This Decree regulates the registration and the use of some biological pesticides and aims to protect the environment. The biological products considered in this Decree are: biological products of microbial origin; pheromones; biological products of plant origin; and beneficial organisms comprising saprophytes and invertebrate predators. *The project guidelines and protocols for climate-smart regenerative agriculture production will define a pest management plan to be adopted by grant beneficiaries that follows national regulations* and requirements for proper Integrated Pest Management (IPM), *in terms of accepted products to be purchased, as well as farmers' own preparations based on non harmful natural animal and plant materials according to biodynamic protocols. The plan also* identifies measures for procurement (if financed by the project) and handling of pesticides according to requirements and procedures for capacity building of farmers.

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Food Safety Law 35-2015	Lebanon has developed the National Biosafety Framework in 2005, has ratified the Cartagena Protocol on Biosafety (CPB) in 2013 and issued the Food Safety Law 35 in 2015. The Law states that the MoA in coordination with the Food Safety Lebanese Commission (FSLC) will set the standards that should be met by GM foods (Article 19). Concrete efforts have been undertaken by the American University of Science and Technologies (AUST) in order to ensure the implementation of Cartagena Protocol in the country through setting up of a GMO testing facility that acquired the ISO 17025 accreditation for GMO analysis. Actual implemented national laws, decrees and regulations aiming to regulate the agricultural inputs, products, human and animal safety, food safety and environment and biodiversity, are indirectly related to biosafety issues and GM products. Thus, the sanitary and phytosanitary measures law (Law 778-2006), intending to update its legal aspects to meet the requirements set by the WTO, bans the importation of GM seeds and seedlings that may introduce new diseases and toxins into the country (Article 14). Recipients of the project's grant funding to upgrade and/or create small local businesses must apply for a licence to the Ministry of Industry to obtain permission for the proposed businesses. Requested document should include among others the investor's records (e.g. Identity card, commercial register), registration receipt of the application at the Municipality, certificate from the Urban Planning Office declaring that the *mapped plots and guidelines for permissible land-uses are respected, blueprints showing installations of industrial machinery and equipment and the arrangements to be made within the Factory, complete study of the manufacturing methodology and the process of discharging wasteresulting from the Factory activities, receipt confirming payment of the application fee. A copy of the entire file shall be submitted to the concerned Municipality, to the appropriate branch of the Ministry of Industry,and to the Ministry of Environment for review and commenting. The plot will then be inspected to ensure its compliance with construction and environmental rules and regulations. The Minister of Industry gives a final decision, within a period not exceeding two months from the date of submission of the application*,
Water Law Nº77/2018	The Law aims at regulating, developing, and rationalizing the exploitation of water resources, and protecting them from depletion and pollution and improving the efficiency of transport and distribution systems. Article 4 lists the general objectives through sustainable water management, such as (i) providing citizens with drinking water; (ii) achieving wastewater disposal; (iii) fighting floods, drought and emergency or chronic pollution; (iv) meet the water requirements for agriculture, livestock, fishing, inland fisheries, mineral water extraction, industry and power generation; (v) conserving and restoring the aquatic environment, as well as terrestrial ecosystems and associated wetlands; and (vi) using, whenever possible, non-traditional water sources. The Law establishes, among other issues, that (i) no one shall extract groundwater by drilling artesian wells or by any other means without obtaining prior authorization or authorization from the Ministry of Energy and Water; (v) the public water institutions determine the rules for equitable distribution of water among different categories of users; (viii) in areas with water deficit, the Ministry must put in place procedures to ensure the rationalization of water use, ensuring the balance of the ecosystem, while in these areas meeting household water needs and irrigation needs of the population is a priority; *The Project activities shall comply with the Law, and all interventions related to water restoration, water harvesting structures and efficient irrigation will be discussed and agreed with the river basin authorities. Additionally, the provision of grants for beneficiaries using irrigation will be conditional to demonstration that no illegal water abstraction occurs in beneficiaries' farmland and that investments will be used according to the climate-smart guidelines and protocols on efficient irrigation.* *Most of the individual water abstraction/irrigation interventions planed in the project are expected to be small-scale and, hence, there will be no requirement for preparing impact assessment.*

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Law of 14/8/1954 on the Establishment of a special Authority bearing the name of the Litani River Authority Law Nº 63 (2016) Provisions for the implementation of projects and works in the Litani River basin from the source to estuary	This Law consisting of 18 articles aims at establishing the Litani National Authority (LRA), under the Ministry of Energy and Water to manage water resources (surface and groundwater resources) over the whole Lebanese territory (not only the Litani River). Its duties and competencies are: the execution of all the parts of the Litani project from technical point of view (irrigation, drainage, potable water, electricity production) as from financial aspects; the installation of a network for the electricity plants in Lebanon; the erection of transformation stations, transmission and distribution lines in the whole Lebanese regions; the big works of irrigation and their exploitation. The contracted parties to implement ecological restoration interventions along the water courses buffering agriculture land in the Litani floodplain, should submit the restoration plan to the Litani Authority for approval. The Litani Authority, together with the Task Force of Experts, will carry out an evaluation of the proposals, requesting clarifications and revisions if necessary before final approval. Staff of the Litani Authority, together with the Task Force of Experts, will participate in the supervision of the execution of the works.
Decree 10598 (2022)	Raises the salaries of all employees and workers (in the private and public sectors) subject to the Labor Law by an amount of LBP 600,000 unless they are benefiting from social assistance. *The project shall respect official salary rates and ensure fair salaries in all interventions requiring employment. Hired employees and workers will be registered at the National Social Security Fund (NSSF) local office, ensuring the payment of taxes and respect for labour rights. Signed contracts shall outline the rights, responsibilities, and obligations of both the employer and the employee, including articles on: (i) object of the contract, (ii) salary of the second party respecting Lebanese minimum wage and transportation allowance, (iii) obligations of the second party; (iv) duration of the contract, working hours and annual leave, (v) social security and medical insurance, (vi) taxes and social security contributions, (vii) applicable laws and competent courts, (viii) grievance mechanisms. The PMU, contracted parties and grant beneficiaries shall advertise job vacancies through multiple channels to ensure that it is accessible to all potential interested parties. Candidates shall submit a comprehensive curriculum vitae (CV) along with a cover letter, highlighting relevant qualifications, work experience, and skills tailored to the position applied for. The Project staff shall inform of its availability to help candidates with problems filling out the necessary forms. Selected candidates shall undergo interviews or meetings organized by a selection panel. The employer shall extend a job offer to be negotiated with the selected candidates.*
Decree 3791 (amending Decree 7426/2012) (2016)	Set and apply the official minimum wage for employees and workers subject to the labor law and the cost-of-living ratio. Same steps as in previous section.
Law 207 (2000)	Prohibits all forms of discrimination between men and women in the workplace concerning employment type, remuneration, employment, promotions and raises, vocational training and attire. All contracts between employers and workers under the framework of the project will include an article informing about the applicable laws, and the grievance mechanism to address complaints in recruitment and the workplace; candidates will be informed about their rights according to the Labour Code.
Labor Code and its amendments 1946	Sets the framework for the terms and conditions of Employment, and rules governing the relationship between employers and employees. The law clearly states that gender discrimination is not allowed in the workplace, laying off women during their maternity leaves in forbidden, and gender discrimination is not allowed. The Labor Code prohibits discrimination between workers based on their gender, with respect to type of work, amount of wage or salary, employment, promotion, professional qualification, and apparel (LC, art. 26). Equal rights shall be given to all employees. However, Labor Code defines a set of prohibitions for women in specific fields and sectors. The Labor Code clearly stipulates that engaging child in jobs, especially those that may put their health and safety at risk, is prohibited. LC sets the norms to be followed. Same steps as in previous section.
Decree 8987 (2012)	Forbids the employment of adolescents and children under 18 years of age in jobs that pose a risk to their health, safety and behaviour. *Hired employees and workers will be registered at the National Social Security Fund (NSSF) local office, ensuring the payment of taxes and respect for labour rights. This will help prevent*

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	the employment of minors, as minor registration is not allowed.
Decree 11802 (2004)	Organizes occupational safety, safety and health in all institutions subject to labor law, and provides the general regulations for the occupational health and safety Recipients of the project's grant funding to upgrade and/or create small local businesses must apply for a licence to the Ministry of Industry to obtain permission for the proposed businesses. Requested document should include among others the investor's records (e.g. Identity card, commercial register), registration receipt of the application at the Municipality, certificate from the Urban Planning Office declaring that the *mapped plots and guidelines for permissible land-uses are respected, blueprints showing installations of industrial machinery and equipment and the arrangements to be made within the Factory, complete study of the manufacturing methodology and the process of discharging waste resulting from the Factory activities, receipt confirming payment of the application fee. A copy of the entire file shall be submitted to the concerned Municipality, to the appropriate branch of the Ministry of Industry,and to the Ministry of Environment for review and commenting. The plot will then be inspected to ensure its compliance with construction and environmental rules and regulations. The Minister of Industry gives a final decision, within a period not exceeding two months from the date of submission of the application*,
Law 293 (2014)	Law on the Protection of Women and Family Members from Domestic Violence. Advances women's rights and safety. Establishes important protection measures and related policing and court reforms. The project will establish a functioning, accessible, and inclusive Grievance Mechanism (GM) to provide an avenue for complaints in recruitment and the workplace, including the family-work environment of the project beneficiaries. The GRM system will be Culture-sensitive whereby grievances will be handled in a culturally appropriate manner, being objective, sensitive, and responsive. The main GM uptake channels will be physical visits, phone calls, and emails to ASC. Other channels will be through a QR code placed on mobile signs near the work sites as well as through Municipalities or union of municipalities where the Project activities will be executed. To manage the risks related to labor and/or SEA/SH, ASC will assign female staff for receiving and processing grievances from women, where separation between men and women is the norm in the beneficiary community and as women are more comfortable talking to other women. Provision to ensure confidentiality as well as protocols for referring cases to specialized agencies will be included (e.g., cases related to gender-based violence, child neglect/abuse, etc), following the consent of the victim/complainant.
Law 205 (2020)	Criminalizes sexual harassment at any location. Same as previous section. All project-related staff (ACS, TFE, contractors, partners, etc.) shall attend awareness sessions on sexual abuse, exploitation or harassment and GBV and the sanctions in case of any misconduct and shall sign and understand the codes of conduct with respect to zero tolerance of GBV. The TFE responsible for supervising the workers/grant beneficiaries shall report to the project manager and Communication/Gender Specialist any incident or misconduct in a timely manner. Contractors, TFE, and partners will ensure that the community is aware of the available GRM and keep a GRM log. Complaints related to Gender Based Violence (GBV), such as verbal or sexual harassment, will be dealt with a high level of confidentiality, and actions will be taken based on the code of conduct.
Law 220 (2000)	Stipulates the civil rights of people with a disability. It provides that a certain number of jobs in the public sector are allocated to persons with disabilities (Act No. 220 of 2000, art. 73). Quotas are also applicable to private sector employers, depending on their size (Act No. 220 of 2000, art. 74). The PMU will ensure that quotas for people with a disability envisaged by Law 220 are respected in all contracts.

255. Moreover, IFAD supported projects undergo a formal quality assessment by IFAD's Quality Evaluation Committee. The committee members are independent and have not participated in the formulation of the project. Appraisal is based on a detailed quality programming checklist which ensures, amongst other issues, that necessary safeguards have been addressed and incorporated into the project design.

F. Duplication

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256. There is no duplication of the project with other funding sources. On the contrary, this project is needed to upscale the efforts piloted by ACS led projects, and other related donor-funded projects described in the table below.

Table 28. Complementarity with other projects

Project name	Summary and geographic area	Complimentary potential
2019-2025 GEF- UNDP Land Degradation Neutrality of Mountain Landscapes in Lebanon	• Strengthening legal frameworks and institutional capacities for LDN mainstreaming into policies and land use planning. • Restoration and management of natural resources mountain tourism. • GIS Platform for LDN monitoring. • Geographic area: Akkar and Jbeil Districts; national policy level.	**Synergies**: the project will closely coordinate with GEF-UNDP to ensure that proper legal framework and enforcement mechanisms incorporate the climate change adaptation priorities. The project will coordinate capacity development actions on policy formulation with UNDP, to help mainstream CC adaptation and mitigation into policies and regulations. The project will benefit from the GEF- UNDP LDN monitoring platform to report on project findings on linkages between CC adaptation and LDN.
2023-2028 WB Project – Lebanon: Green Agri-food transformation for economic recovery	• Improve the resilience of farmers and Micro, Small and Medium Enterprises (MSMEs) in the Lebanese agri-food sector, through: o access to finance to strengthen resilience and competitiveness of farmers and MSMEs involved in agri-food VC. o Improve and protect infrastructure for agriculture and restore access to services. o Improve access to C-smart practices, food safety, and agri- food export and marketing. Geographic area: Country-wide.	**Synergies:** The project will benefit from interventions at the national level to improve policies, infrastructure and market and export strategies for agri-food products under C-smart production and marketing systems. The project team will coordinate actions with the WB to ensure cross-fertilization and exchange of experiences and field visits, given that the WB project will not intervene in the project area.
2021-2023 BASATINE - *Bolstering Agriculture Systems' Ability to Invest, Nourish and Employ* project[120]	AFD funded consortium led by CARE France, contributing to the livelihoods of 3,400 smallholder farmers affected by the economic crisis, through: • Emergency funding support for inputs, seeds and technical support. • Training on agro-ecological farming and financial skills. • Improved access to markets. Geographic area: Akkar and Beqaa districts.	**Synergies:** BASATINE will be completed at the time the AF project may start. The project will build on the lessons learned of BASATINE on the development of the skills of vulnerable farmers on agro-ecological farming and financial issues.

[120] https://www.afd.fr/en/carte-des-projets/bolstering-agriculture-systems-ability-invest-nourish-employ-basatine

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2022-2025 EU- funded Bioconnect project, jointly coordinated by the Lebanese NGOs ACS, SPNL, ACE and ADR.	Enhancing management and governance of high-value ecological sites and creation of new Protected Areas and OECMs[121] for broader landscape conservation. Main actions: • Monitoring schemes for flora and fauna conservation in protected areas in a climate change scenario. • Traditional pastoral and farming practices promoted. • Education & capacity development for local communities. • Policy making and advocacy on biodiversity and sustainable NRM. Geographic Area: Several protected areas and high-value sites, including the SBR and Mount Hermon.	**Synergies:** The AF project will focus on the development zones of the SBR and Mount Hermon, complementing the Bioconnect work on the core zones. Bioconnect findings on biodiversity will be used to develop the environmental indicators for the climate-smart management practices prioritized by the project. The identification and mapping of high climate-risk areas by the AF project will provide an umbrella for the three target landscapes to better identify adaptation needs for the conservation and management of crop wild relatives and local agrobiodiversity values.
2023-2025 Resiland project, funded by the Italian Cooperation, and jointly implemented by ACS and its Italian partner Istituto Oikos.	Ensure the conservation and sustainable management and resilience of mountain ecosystems in three protected areas to support biodiversity and the ecosystem services on which rural uses depend. The project includes the following actions: • Support to improve the PA management plans. • Ecological restoration of degraded habitats in the PAs. • Enhance public-private partnerships on biodiversity-based development opportunities, such as ecotourism and "green consumption". Geographic area: SBR, Jebel Moussa Biosphere Reserve, and Mount Hermon Nature Reserve.	**Synergies:** The AF project will build on the improved SBR and Mount Hermon management plans, especially on the valuation and quantification of ecosystem services, such as wood and NTFPs. AF project will use this information to define sustainable levels of biomass and NTFPs exploitation, and of maintenance of natural habitats in/around farmland plots, according to the thresholds defined in the Resiland pilot studies. Resiland experts will be part of the multi-stakeholder teams for the climate risk mapping and prioritization of climate-smart interventions under the AF project Component 1. **Avoiding duplication of efforts:** The project will collect detailed information about the pilot zones in which the wood/NTFPs have been evaluated and quantified, to avoid overlapping and ensure that the priority climate-risk areas in the landscapes are complementary to the Resiland supported pilot sites.
2020-2024 Italian Aid Agency-funded project "STEPping up Nature Reserves Capacity – STEP4Nature", led by UNDP.	Contribute to a strategic sustainable management of Nature Reserves in Lebanon, to conserving Lebanon's natural capital and strengthen the Ministry of Environment's capacities to plan and sustainably manage protected areas and nature reserves. The project will specifically contribute to the enhancement and improvement of nature reserves in Lebanon and will subsequently have positive effects from an institutional, socio-economic and technical perspective. Geographic area: 18 nature reserves, including the SBR.	**Synergies**: the AF project will build on the consolidated legal and regulatory framework and the enhanced infrastructural capacity fostered by the AICS-UNDP project especially in its line of work related to the strengthening of the legal adaptation framework at the municipality and protected areas level.

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[121] Effective Area-based Conservation Measures.

Under design: Restoring Ecosystem Connectivity for Biodiversity and Sustainable Livelihoods in the Litani Watershed (ECONNECT) Project.	ECONNECT's objective is to implement sustainable landscape management approaches in the Upper Litani Basin, with a focus on biodiversity-friendly agriculture, aquaculture and the transformation of the heavily polluting crop and aquaculture sectors, while promoting innovation, learning, replication and upscaling.	**Synergies**: the AF targeted municipalities and communities do not overlap with the those covered by ECONNECT project. Both projects' design (led by IFAD) partially overlaps in time, and the two design teams have coordinated efforts to define differentiated intervention areas and actions. AF operates in the northern municipalities of West Beqaa and Rashaya, as well as the Shouf part of the SBR; GEF operates in the southern municipalities of the West Beqaa and Rashaya, with no actions in the Shouf. In this way, the two projects will represent an important joint effort to improve the sustainable management of the broad corridor that makes up the Shouf reserve, the Beqaa Valley and the large key biodiversity area of Mount Hermon. The AF project will develop climate-smart models to enhance the climate-resilience of landscapes and livelihoods through landscape-level interventions for climate-risk reduction (e.g. integrated fuel load management in critical high-fire risk areas within the landscape; ecosystem restoration in critical landscape areas with flood and erosion risks; climate-smart agriculture production systems and businesses to enhance the adaptive capacity of smallholder farmers with farmland plots in high climate-risk areas). The GEF has a more focus on options for adopting aquaculture as part of sustainable farming systems for vulnerable people around the Qaraoun lake area and restoring connectivity in the corridor between the biodiversity value Qaraoun region and Mount Hermon. **Avoiding duplication of efforts:** The projects will ensure that there will be no duplication of efforts at the geographical level (effective separation of intervention zones) and at the level of actions, but, on the contrary, the experts, training materials, guidelines and protocols produced, etc., will provide value. added to support actions in the two projects. Sustainability is the basis of all types of interventions proposed by AF and GEF, so there will always be some types of actions that will be valid for both projects. The PMUs of both projects will coordinate to make cost-effective use of the resources of both projects, and generate opportunities to share produced materials, training opportunities, and organization of exchanges and learning visits.
2019-2023 EU- funded "Saving Water Growing Crops-Lebanon project", led by ACS and its Italian partner Istituto Oikos.	Piloting automatized efficient drip irrigation with solar pumping and higher water runoff harvesting in existing water lakes. Geographic area: Mrusti municipality, Shouf district.	**Synergies:** The project will help upscale successful results on reduction of irrigation water needs per hectare, from the piloting of efficient drip irrigation using automatized and solar pumping systems. Vulnerable farmers from other municipalities will benefit from grant investment support for upscaling results.

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Under design: The WB-led GEF project "Community-based Wildfire Risk Management in Lebanon's Vulnerable Landscapes Project".	The objective of the project is to improve sustainable forest landscape management in selected fire hotspots in Lebanon for reduced wildfire risks. The project proposes actions at: national level: cooperation and coordination mechanisms between MoA, MoE and DRM Unit; a system for surveillance, alert, early detection and early response to wildfires; establishment of national forest fire emergency fund as an institutionalized system; awareness campaigns; forest fire academy to train fire managers. Territorial level (areas of the Shouf district that do not overlap with the AF project landscapes): strategic fire management planning; training of concerned actors; relationships between local civil center defenses and fire response teams; operational, gender-inclusive plans for fire management in hotspot areas; fire fighting equipment, tools and relevant infrastructure; FLR interventions. Geographic area: Akkar, Miniyeh-Danniyeh, Aley-Shouf – including areas from Metn-Baabda.	**Synergies:** the AF and WB projects operate in different regions of the Shouf District (WB does not operate in West Beqaa and Rashaya), there being complementarity between the planned actions, more focused on fighting fires of the WB project and more focused on landscape and livelihood climate resilience, including the climate risk of increased large-scale fires, in the AF project. The WB project is focused on the management of forest fires and provides a national framework for improving policies, knowledge, inter-ministerial coordination and governance, from which the AF actors and actions linked to integrated biomass management (forest-agriculture-controlled grazing) to build fire-smart landscapes will benefit. The AF project PMU will make the link between both projects, facilitating the transmission of knowledge regarding improvements in anti-fire policies and training opportunities for the actors of the target municipalities that are part of the civil centers, so that they benefit from the inputs produced by the WB project. The PMU will also promote learning visits of project actors to the intervention areas of the WB project and vice versa, so that there is an exchange of knowledge that helps improve the actions proposed by both projects. The AF and WB projects will benefit from the sharing of expertise, learning materials and training opportunities developed by the two projects on the specific themes on which each project has focused.

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G. Learning and Knowledge Management

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257. Effective knowledge management – including the collection, generation and dissemination of information – is an important component of climate change adaptation. Learning from adaptation activities and being able to transform knowledge into products that are targeted at various audiences is essential to effective climate change adaptation.

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258. The proposed project places a strong emphasis on learning and knowledge management as a key approach to achieve behavioural change of landowners and users. It aims to improve data availability on climate-smart landscape planning and management practices, generate new knowledge on the relationship between nature-based solutions, climate risk reduction and landscape and livelihoods resilience, and disseminate data and knowledge. Several project outputs contribute towards this:

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- Output 1.1.1 will identify and map critical high climate-risk areas as decision-making tools for the multistakeholder landscape platform members to select intervention types that better respond to the climate risk reduction priorities, guide the process of selecting applications for grant funding that best respond to the priorities, and monitor climate resilience improvements.

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- Output 1.1.2 will help develop Climate-adaptive guidelines for the design and implementation of nature-based solutions. Handbooks with guidelines will be used by land practitioners, PA managers, forest and agriculture extension providers, and the local organizations involved the implementation of the climate-smart measures.
- Output 1.2.1 will yield written protocols and municipality ordinances with the accompanying implementation frameworks describing in detail the "what, when, how, and who", to guide both the public administration staff and landowners and users in the effective application of policies.
- Output 1.2.2 and Output 2.1.1 will develop training materials and tools for the training trainers, land users and business actors on the various climate-smart land uses and local businesses.
- Output 3.2.2 will collect good practices and lessons learned, develop knowledge materials adapted to different audiences, and disseminate them through different communication systems. Knowledge exchange activities will be executed through regional partnerships and South-South and Triangular Cooperation (SSTC). This includes learning visits to regional nodes of excellence on climate-smart nature-based solutions, and participation in regional fora of existing cross-Mediterranean networks.

259. The project will establish learning sites, in some cases located on the farmland properties of lead farmers, to show field interventions and display information on good agriculture and forest management practices and successful ecological restoration measures. The sites will be locations for training and raising awareness, for land users to visualize and debate about climate-smart practices, and for visitors to learn about the cultural and ecological values of

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the products they value and consume.

H. Consultative Process

260. The project design team developed and implemented a stakeholder engagement plan to gather data and stakeholders' concerns and views on climate change impacts and landscape/sectoral adaptation measures in the three target landscapes during the design stage of the project. Multi- stakeholders' consultation meetings, based on the *Word Café* methodology, were organized in each landscape with the intent to present the content of the detailed design to stakeholders in the target areas and seek feedback, while also collecting needed information to inform the design. Special attention was given to ensure a gender and youth focus in these consultations. Specific data regarding women and other key target groups were consulted in the framework of Key Focus group meetings. The consultative process (including lists of stakeholders consulted) is detailed in *Annex 2: Stakeholder consultation process*.

261. A first two-weeks field mission took place in October 2023. The design team organized a multistakeholder workshop in each landscape, followed by meetings with local stakeholders in the field. Moreover, key informants from national and international agencies, such as UNDP, WFP, WB, MoA local institutions, the Lebanon Reforestation Initiative, and representatives of the Ministry of Environment, were consulted in-person and through online meetings. While in the field, the team visited and met with several potential beneficiaries, including women and men farmers involved in rainfed and irrigated cropping system; sheep and goat shepherds; beekeepers; food and dairy processors including women cooperatives and family processing members; members of agriculture producer organizations; the owner and staff of a briquettes and pellets factory; local entrepreneurs of tree nurseries, agro-tourism, winery; the workers involved in forest thinning and pruning operations; the managers and workers of a waste treatment and composting unit; technicians involved in automatized efficient irrigation with solar pumping; NGO staff; protected area managers and extension agents; researchers; municipality members.

262. In March 2024, three multi-stakeholders' consultation meetings attended by 111 people were organized (one per landscape), as well as several key focus groups meetings (women, beekeepers, shepherds, producer groups). Specifically, meetings with woman and women's representatives took place, as recommended by the gender-focus design process. Local stakeholders informed the design team about their perceptions, coping strategies, and needs to combat the negative effects of climate change on. their cropping systems. The following table summarizes the data collected:

Table 29. Perceptions, coping strategies and needs of consulted local stakeholders

Consulted actor	Climate change perception	Observed effect on production system	Adopted coping strategy	Needs and recommendations
		Decreased production of grapes. Loss of production and plants (e.g. olives due to late 2013 and 2016 frost), especially introduced new varieties showing lower adaptation capacity. Loss of apple production due to hail (lower problems with cherries). Higher pest & diseases with new ones affecting for instance mulberry and apple. Increase of air humidity (proximity of Qaraoun lake) impacting pest & diseases occurrence. Higher impact of agrochemical on water resources. Higher opportunities for new crops (e.g. oranges). Excessive and ineffective use of agrochemical negatively affecting soil water, crops, beekeeping. Problems with governmental instructions about type of agrochemicals and quantities to fight pests and diseases with negative results. Chicken manure negatively	None at the moment. Adoption of irrigation in rainfed systems (olives, wheat) Adoption of no till and cover crops to keep soil humidity. Adoption of multi- cropping system mixing several woody and herbal crops. Use of shadow nets to protect apple crops from high temperature. Banning herbicides along nature trails (Mount Hermon) has supported beekeeping too. Pilot experience on automatized efficient irrigation with solar pumping helped reduced 45 % of irrigation water per hectare. Some initiatives on organic production (e.g. Healthy basket) stopped after project end. Burning truck wheel tyres to make smoke and increase temperature during frost (highly polluting activity). Keep supporting organic production of traditional crop	Higher access to awareness, information, training and technical support on C-smart systems and practices. Training staff of technical school and extension providers on climate change adaptation issues. Better regulation of irrigation water for equitable and fair distribution, and illegal extraction prevention. Planting hedges and other agroforestry techniques to enhance soil water regulation. Support to restore forests, pastures and abandoned farmland plots to help overcome the impact of economic crisis. Focus production on locally adapted crop varieties. Need for local seed banks and nurseries to increase availability and access to climate-adapted species and varieties. Support the organization of water users participating in a better control of water abstractions, efficient irrigation schemes, with fair/equality principles, and viable solutions to cover the cost of fees. Share knowledge on climate-smart farming practices and weather data to

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Women- and men-led farmland proprieties Shepherds Agro-tourism managers Extensionists Women processing cooperative members, Producer organizations Member of municipal unions Family farming and food processing business Briquettes factory staff Managers of composting unit Protected areas staff Private entrepreneurs Researchers Education centres staff	Higher temperatures Extreme summer temperature (> 42 ºC). Higher winter temperature followed by extreme weather events (frost and hail) affecting olives and other crops. Changes in temperature and seasonal rainfall distribution affecting ripening of grapes and figs. Lower water availability due to the drying of upwellings. Lower precipitation (snowfall reduction). Short heavy rain preventing soil water infiltration. More frequent strong winds and high temperatures helping pests to disseminate over crops.	affecting soil & water. Higher need of inputs (e.g. irrigation and pumping equipment). Problems in irrigation water distribution and availability at critical moments. Some farmers abandoned traditional fruit tree crops that are better adapted to climate change impacts do to recommendations from extension staff and new planted crops/varieties failed in the face of climate shocks. High number of young unemployed feel forced to work on low producing farming systems facing many problems. Irrational management of livestock exacerbates climate change impacts on natural vegetation and large number of wild useful plants. Women suffer from higher and excessive heat and humidity conditions during processing. Growing climate shocks have impacted production, higher pests & diseases, and prevented women from producing preserves. Changes in crops with the abandonment of traditional ones has negatively enhanced climate risks. Women are very worried about waste and environmental pollution.	species and varieties, building on existing healthy soil/water conditions and on the reputation of food products from Rashaya region. Crop calendar optimization based on weather forecast monitoring. Crop diversification and inclusion of the animal factor (livestock, bees), based on biodynamic organic production, with crop rotation and IPM, enlarging production season and coping with climate shocks differently affecting each crop type.. Renting of farmland upwards in mountain slopes more favourable for vineyards. Livelihood security strategy with barter of products and assets between farmers. Diversified marketing strategy (shop at farmers market, online, WhatsApp, on- farm/tourism).	adapt cropping calendar according to changes in climate. Need for a regional committee to plan adaptation needs and opportunities. Support to create and rehabilitate farmers' cooperatives, with major focus on women. Need for funding schemes (e.g. grants, subsidies, etc) to facilitate adoption of climate-smart technologies. Support farmers organizations for the sharing of equipment, inputs and services as a cost-benefit strategy to adopt climate-smart practices and access markets. Higher/better support from the administration, including marketing opportunities, and law formulation and enforcement. Support for marketing strategies, linking producers with consumers, and more local farmers' markets. Higher awareness about renewable energy sources, such as briquettes. Support for clean energies (biomass and solar), following existing pilots. Use of chicken manure together with olive residues for briquettes. Knowledge sharing and investments on compost production and use and waste management. Recommendation to create info and service centres, and laboratory, facilitating the access to C-smart equipment, inputs and technical advise, meteo info, soil analysis, etc. Women specifically asked for awareness, information, and education opportunities for them on C-smart systems and technologies, as well as equal access to technical support and finance. Women asked for improvements in the cooperatives with equal access to decision-making, and better services to members in terms of shared marketing opportunities, info about suitable C-smart crop types, agronomic calendars, technologies, waste management.

263. The main issues emerging from these consultations related to land users' concerns, exposure, impacts and strategies in the face of agriculture production problems and damages caused by a higher frequency and intensity of weather events (frost, hail, wind, torrential rains, heat waves with extreme temperatures, and drought), drying of water springs and wells, pests and diseases, forest fires. Many participants mentioned climate change as the main cause of the climatic imbalances that affect their crops. Women's main concerned were related to inequality problems preventing many of them to have decision-making positions, and limiting access to knowledge, resources, extension support, and funding. Unemployment affects many young people who find very limited attractive job opportunities in rural areas. The workshop and focus group participants recognized the importance of climate change adaptation to improve the quality of their production systems and reduce the risk of loss of production in the face of increasing climate risks. Participants recommendations were in line with the GoL adaptation priorities of the Lebanon's 2020 NDC, including

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among others: (i) the importance to invest in biomass waste management for bioenergy and compost production; (ii) the importance of agroforestry with local/native fruit tree species/varieties and aromatic plants to create multiple benefits, including ecosystem restoration and crop diversification; (iii) the need for awareness, information, improved training curricula, and regulars technical advise to facilitate the adoption of adaptation measures; (iv) the importance to receive grant support for climate-adaptation investments and willingness to provide in-kind contribution; (v) the need for improved regulations and enforcement mechanisms; (vi) the need to enhance the role of cooperatives, especially in the case of women; (vii) the importance of having local market places, and information and service centres to support their production activities.

I. Justification for funding request

264. Lebanon is experiencing a multi-faceted crisis, which will only worsen with climatic impacts. The need to prioritize climate financing in Lebanon arises, to a greater extent, from the scarcity of public and/or private resources to develop and support specific projects needed to comply with adaptation and mitigation targets under the UNFCCC and support green growth.

265. The proposed project responds to a request of the government. Annex 1 presents the official letter from the Minister of MoE to IFAD requesting further financial resources to support climate change adaptation for rural development in the ecocultural landscapes of the Shouf-West Beqaa- Mount Hermon corridor. MoE sees the necessity of mobilizing resources for landscape and livelihoods' climate resilience, because climate change is poorly incorporated in rural development plans and policies. MoE aims to use this project to upscale the implementation of the NDC adaptation priorities and to upscale promising approaches that are currently being piloted in the framework of various projects.

266. **Project costs and financing** are as follows: USD 4.3 million Adaptation Fund grant (of which USD 3,963,145 for project costs, and USD 336,855 Project Cycle Management Implementing Entity Fee). As part of the design, local stakeholders have shown their high interest for the project and their willingness to contribute, in the form of in-kind, to match the project investments. Project design has estimated an approximate USD 1.3 million of in-kind contribution from the project beneficiaries.

267. The table below outlines the baseline and the alternative adaptation scenarios that the Adaptation Fund will help materialize, focusing on the full cost of adaptation reasoning.

Table 30. Baseline and alternative adaptation scenario the Adaptation Fund will help materialise

Baseline scenario	Adaptation Fund additionality
Component 1. Capacity development and policies for resilient landscapes and livelihoods.	
Climate change impacts currently affect agriculture production in the target landscapes. The multiple climate impacts on production systems include the higher frequency and intensity of weather events (frost, hail, wind, heavy rains, heat waves with extreme temperatures, and drought), drying of water springs and wells, higher presence of usual/new pests and diseases. Smallholders do not have access to training and receive little guidance from extension agents and it is often wrong in the face of the climatic imbalance to which they are exposed. The combined effect of more frequent and intense heatwaves and drought, together with the abandonment of large patches of secondary vegetation with high fuel load, is increasing the occurrence of wildfires in the region, specially in the Shouf landscape. The municipalities and organizations managing the SBR and MHNR lack knowledge on effective climate-smart strategies and regulations to reduce climate risks. Business as usual support: on-going projects do not take specific action to build social capital around climate change impacts and adaptation in the target landscapes (a key barrier to adaptation), and do not specifically take into account climate risks, how they may affect the landscape ecosystems and people, as well as the production systems/value-chains, and how to regulate land uses and management practices that are adaptive to climate change.	- At least 90 private and public extension providers from the target landscapes will be trained on climate-smart restoration, sustainable management, production, and business development issues to support landowners and land users' adoption of adaptation solutions through training and coaching. - At least 454 farmers and forest users/managers will be trained and receive continuous coaching support with knowhow on climate-smart restoration, sustainable management, production systems and businesses. - All project staff, trained trainers, and trained beneficiaries will have a representative balanced between women and men, and young unemployed to ensure gender equality. - Prioritization of high climate-risk landscape areas and intervention measures will allow being strategic and cost-effective to build resilient landscapes and livelihoods. - Climate-smart management models with guidelines and protocols will inform learning, policy development and project investments. - Municipalities and protected area management organizations will include climate-smart regulations in their planning processes, and their staff will be trained on policy formulation and skills to organize, inform and enforce compliance with the rules by landowner and land users.
Component 2. Nature-based solutions for environmental, social, and economic sustainability	

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The climate change increase in heat waves, combined with drought/water stress and strong winds, is the main cause of the increasingly frequent, devastating large scale wildfires throughout the Mediterranean region. This problem already negatively impacts Lebanon, and specifically the development zones of the target landscapes (especially the Shouf district), where there is an accumulation of dry biomass in excessively dense secondary coppice forests, and dense scrub formations. This generates competition and weakening of trees due to increased water stress with higher pest outbreak, dieback events, and wildfires. Wildfire risk is especially higher in the interface between dense secondary forest stands and areas with a high fire ignition risk due to maladaptive burning practices, negligence, uncontrolled hunting, and arson. Furthermore, the uncontrolled construction of houses is significantly increasing the wildland-urban interface, with a consequent increase in the risk of fires and pollution. Wildfires cause significant losses of homes, assets, productive systems, and human lives, with devastating effects for vulnerable populations in the project area. Vulnerable wild fauna and flora species in the target landscapes (e.g. *Cedrus libani*, *Quercus* spp. as well as many wild relatives of crop plants such as *Pyrus syriaca, Prunus ursina, Pistacia palaestina, Crataegus* spp, among others) will require assistance to migrate to areas with optimal climate conditions due to climate change temperature and precipitation changes causing bioclimatic shifts. Projected temperature increases over the next 60 years, in the absence of adaptation measures, will expose crops at every growth stage. For temperature, a 1°C rise leads to a 13% loss in wheat yields, whereas the combined effect of drought and heat can cause 18% and 28% yield losses for grain legumes. Higher frequency and intensity of frost, hail, and heat blisters already resulted in the sudden dead of trees, damage to flower buds, and burning of crops and fruits, including olive, grapes, olive, apple, apricot, tomato, melon and cucumber. Business as usual support: farmers do not receive the necessary support to adapt management techniques, plant reproductive material, cropping calendar, equipment, and inputs to the climatic imbalances that they are already suffering. Moreover, and according to the information provided by them during the project design, they often receive incorrect information and inputs that harm their production, or they do not receive any technical assistance, training or access to financing to adapt their production systems. Pilot projects have been developed in the SBR on forest landscape restoration, biomass management and related companies, on restoration of terraces for diversified crops with wild aromatic/edible plants and diversified marketing at a national and international level (fair-trade), on automated and efficient use of solar-powered irrigation, and on biodynamic agriculture to improve fertility and water, restore farmland habitats that support biological control of pests and pollination, include the animal factor, and apply other regenerative agronomic techniques.	- The project will build on and help upscale the results of successful pilot experiences, improving its design and implementation with consideration of climate impacts (prioritization of areas of the landscape with high climate risk, design of guidelines and protocols with integration between complementary agricultural- forestry uses -pastoral-water-energy, estimation of the positive effect in terms of increased resilience, and monitoring with a focus on self-assessment techniques. - Integrated biomass management (forest thinning and pruning, collection of agriculture waste, and controlled grazing) will be implemented in 100 hectares of critical landscape wildland-human interface areas with very high fire risk. This will benefit at least 20 towns and their estimated population of 46,800 people, whose assets will be better protected with a lower probability of large-scale fires, and who will be prepared for a better rapid response in the event of fires. GHG emissions will be reduced from avoided wildfires, and carbon stocks will increase in more healthy and mature forest stands. - Four multipurpose water reservoirs will be constructed and/or rehabilitated to provide, in addition to the eventual firefighting water needs, support for the irrigation needs of at least five farmland production units and for local water needs of two livestock units. - At least 1,000 vulnerable households will benefit from the produced briquettes to help replace polluting diesel heat/cooking sources, with a positive effect in cost reduction up to half, GHG emissions reduction and in-house human health. The environmental sustainability of the briquettes is guaranteed by the fact that they are produced using biomass waste from thinning and pruning of forests and agriculture land, and that the conversion of this waste into briquettes substantially contributes to fire abatement, as demonstrated in previous pilot project (Kfarfakoud briquettes plant in the Shouf). - At least 274 workers (at least 30% women) will acquire professional skills enhancing their options to be hired in restoration and natural resources management interventions (employment ensure during 3 years of the project to improve their skills and be able to include years of applied experience on their CV. - The ecological restoration of 20 hectares of water courses and 60 hectares of degraded grasslands (in addition to the restoration of secondary forests already mentioned) will create corridors for wild species and increase the populations of key species with high biodiversity value according to the SBR and MHNR management plans and biodiversity assessments. - An estimated number of 200 smallholder farmers with farmland plots buffering the restored water courses will benefit from the freshwater restoration effects on flood risk reduction. - 60 shepherds with livestock production will benefit from the pasture restoration and sustainable management interventions. - An estimated number of 566 beneficiaries (at least 30% women) will receive annual training, regular technical support and investments to apply climate- smart regenerative agriculture systems and techniques, and develop/enhance climate-proof businesses and marketing on food processing, agrotourism, bioenergy, compost, and tree nursery. - Three landscape platforms (DMOs) will support producer organizations, women cooperatives and enterprises to market their products, based on a climate-smart brand-marketing strategy, local farmers' markets and physical/only linkage between VC actors and consumers.
Component 3. Climate-resilience assessment, knowledge management and awareness raising	
Knowledge about innovation and development of climate- smart solutions is often inaccessible to land users and managers due to the lack of effective monitoring mechanisms, development of learning products based on successful results, and participation in existing	- The project will develop self-assessment protocols for the different climate-smart practices - based on the successful examples of previous pilot actions - and will provide applied training and continued technical assistance to beneficiaries and managers for their effective use and adoption after completion of the project. The project

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knowledge exchange networks. Business as usual support: ACS with the support of national partners is currently developing a monitoring strategy and system to assess the conservation status of biodiversity (included agrobiodiversity) and impacts related to the different land uses and management practices in the key biodiversity areas that overlap with the three target landscapes (SBR, Ammiq wetland and MHNR). In the framework of Bioconnect project, ACS, with the support of IUCN, is adopting the IMET tool to facilitate participatory self-evaluation strengthening in-depth analysis, planning and monitoring efforts to improve biodiversity conservation outcomes. Moreover, the pilot projects on biodynamic agriculture and forest restoration have already applied self-assessment tools to encourage the participation of land practitioners to monitore progress and learn from results. is supporting the use of a A GIS Land Degradation Neutrality (LDN) monitoring system is set up by the MoE in the framework of the GEF-UNDP project "Land Degradation Neutrality of Mountain Landscapes in Lebanon". In all cases, there is a gap in terms of assessing climate change impacts and results from climate resilience measures and multiple benefits.	team of experts will ensure the inclusion of key considerations of climate impacts and resilience indicators in the monitoring protocols. - The project will ensure dialogue and exchange of results with the MoE unit in charge of the LDM monitoring system, and with national and international partners and initiatives of interest in the field of increasing the resilience of landscapes and livelihoods. The communication and gender unit of the project will ensure that the monitoring protocols used are gender inclusive, and that all materials produced and exchanges carried out through learning visits ensure adequate and disaggregated consideration and analysis at the gender level.

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J. Project Sustainability

268. The sustainability strategy for the project builds around three pillars, namely the social, environmental and economic return on the investments that set the ground for the continuity of the actions of the project once completed. The project will address the interconnection among the three pillars of sustainability, in that every project intervention will consider the spillover effects among pillars (e.g. the economic opportunities that transitioning climate-smart production systems create for new employment segments and business competitiveness).

269. The project's sustainability will notably be guaranteed by its participatory approach, relying on social engineering for component 1 and 2 respectively through the establishment of MSP managed clusters and development of local climate adaptation strategies (LCAS). More specifically:

- Under component 1, the participatory social-learning approach will guarantee the ownership of the climate-smart nature-based solutions from rural communities, and stakeholders' engagement will further ensure their commitment to a more sustainable management of natural resources (e.g. fire prevention through integrated biomass management interventions in critical high-fire risk areas of the target landscapes and community preparedness to react against fires; ecological restoration, sustainable natural resources management, etc.). The adoption of climate-smart priorities and regulations in the municipal and protected area plans and the qualification of their staff to inform and reinforce their application by landowners and land users, will contribute to the long-term sustainability of the project.
- The sustainability of activities under component 2 will be guaranteed by the support provided to DMOs and their members and clients, brokering agreements between local producer groups, other value chain actors and consumers. The increased stability of income, thanks to more resilient production systems, diversification and enhanced business skills will facilitate continued investments in targeted value chains for smallholder producers, producer organizations, cooperatives and local enterprises. The lessons learned through the implementation of the project's grants will eventually be fed into the guidelines and criteria of the Cedar Loan (CL) scheme, which currently does not have a specific climate-smart profile. This approach has already been agreed with ACS, the managing institution of the CL. On the medium term, all the applicants to the CL will have to integrate CC adaptation/mitigation criteria in order to be positively evaluated by the selection panel of the scheme.
- Component 3 will contribute to the long-term sustainability of the project, through (i) the establishment of a long-term monitoring system that encourages the adoption of self-assessment protocols and tools by the landscape practitioners (land users, local business operators, protected area managers, etc.) to monitor progress towards sustainable conditions, (ii) the production of information materials with best practices and case studies to be replicated within the landscapes and elsewhere; (iii) the participation of landscape actors in local, national and international networks and platforms, which reinforce access to new opportunities for knowledge exchange, markets and financing facilities.

270. **Environmental sustainability** is embedded in the project, notably through the adoption of *Nature-based Solutions* addressing key climate change challenges through the protection, sustainable management and restoration of natural ecosystems and farmland systems, benefiting both biodiversity and human well-being. Project interventions will use an ecosystem-based adaptation approach both at farm and landscape level, following key sustainability pillars – sustainable use of natural resources, minimizing waste and pollution, and adapting to and helping to decrease climate change. In concrete, the project aims to achievement long-term environmental objectives such as:

- Integrated sustainable biomass management at the landscape level (prioritizing critical high-fire risk areas in the wildland-human interface). Biomass management will help reduce future burned area (e.g. an estimated 30-50 percent of burned area reduction based on analysis of fire-smart landscape land uses and management practices undertaken in similar agro-environmental contexts[122]), with a long-term positive effect on current/future GHG emissions reduction (avoided burned forestland) as well as other problems such as air and water pollution, forest and biodiversity loss, and soil erosion. Moreover, the development of local bioenergy production business will help replace the use of fossil fuel for heating/cooking in rural houses reducing both GHG emissions and in-house health problems from burning diesel. The use of agriculture and forest waste for the production of bioenergy and compost follows a circular economy approach with long-term sustainability benefits. The promotion of regenerative agriculture production systems through the grants scheme for the project beneficiaries will also help reduce GHG emissions due to a reduced use of fossil fuel in no/reduced till farming practices (e.g. up to 60 percent emissions reduction when practicing no/reduced till compared to conventional agriculture[123]) and in the replacement of diesel powered generators with solar pumping systems in efficient irrigation systems (e.g. estimated 14,977 kg/yr reduction in GHG emissions compared with diesel system[124]). Additionally, sustainable forest biomass management enhances carbon stocks when converting secondary forests into more heathy and mature forest stands, and regenerative agriculture practices regarding agroforestry, soil mulching, rotation and

[122] Van der Schriek, T et al. 2023. PROTOCOL on the estimated reduction iin fire-related GHG emissions, under future climate change scenarios in fire-smart and mosaic-like resilient Mediterranean landscapes. NOA; Pedro Regato, et al. (2023). Building fire-smart landscapes in the Mediterranean region: problem analysis and selected best practices. Project "MediterRE3. Technical Report.

[123] https://www.fao.org/agriculture/crops/thematic-sitemap/theme/climatechange0/conservation-agriculture/ir/

[124] Hilali, A. Et al. 2022. Migration to solar water pump system: Environmental and economic benefits and their optimization using genetic algorithm Based MPPT. Energy Reports 8 (2022) 10144-10153

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cover crops enhances above/below ground carbon sequestration.

- Improved soil fertility and soil water conservation (enhanced soil water storage and avoided evaporation) in sustainable management systems, such as minimal/no till farming with cover crops and alive/dead mulches under rainfed or efficient irrigation; rotational grazing systems; higher soil water availability and more efficient uptake in thinned/pruned forest stands.
- Improved agrobiodiversity in farmland areas, with the restoration of farmland habitats (e.g. scattered trees, hedges and ruderal buffer vegetation, inter-row natural vegetation, and riparian habitats in/around farmland plots) and the use of wild edible plants to diversify farmland production and as better climate-adapted rootstocks for improving resistance to drought, frost, and pests of local fruit tree varieties. The restoration and integration of farmland habitats and the animal factor (e.g. few livestock for family food security and soil manure; apiculture) into agriculture production provide long-term environmental sustainability results such as enhance pollination, pest/disease control, soil fertility, microclimate and water regulation.
- Ecosystem restoration and sustainable management interventions help regain species diversification and functionality in degraded habitat types, with a long-term sustainability result in terms of higher ecosystem connectivity and climate resilience in the target landscapes, and viable species populations.

271. **Social sustainability** of project investments will be conditional upon the achievement of long- term social objectives, such as:

- The project will build the professional skills of local women and young unemployed increasing their ability to enter the local labor market or in other municipalities or regions of Lebanon or to create small businesses. The experience acquired in the contracts that the project will provide them to assist in the execution of the planned interventions will give them applied experience, increasing the value of their CVs.
- During the project implementation period, small briquette production factories will enable at least 1,000 vulnerable smallholder farmers and their families to reduce energy costs by half and improve the healthy conditions of their homes. The production of these local factories will provide long-term sustainability for these families and for other new ones as their production capacity increases (according to the business plans developed).
- The diversified production systems supported by the project interventions will help reduce climate- shock losses, allowing sufficient margins for food and income security of vulnerable households.
- The enhancement of social cohesion and gender equality through social learning and collaborative governance mechanisms of social interaction (associationism among landowners and users, user and producer organizations, cooperatives, marketing platforms, etc.) will facilitate equal access to decision-making, resources, training, technical support and finance. The project promotes the collective action of a plurality of public and private actors (municipal and SBR/MHNR management bodies, local associations, academia, DMOs, trade associations, cooperatives and agricultural enterprises, end buyers) as a model of responsible agriculture for co-producing economic and social value while enhancing the ecosystem services on which climate-smart sustainable production systems depend. This will enhance the capacity of the target groups to access new markets, build new networks with consumers, create new short supply-consumption chains, and enhance the image of climate-smart management systems and products (branding strategy) in society as well as their own reputation and visibility.
- Climate resilient interventions in critical high-climate risk areas of the landscapes will provide social sustainability in terms of urban centers and settlements that are more resilient to fire and flood risks and with plans to convert waste into goods (bioenergy, compost) based on a circular economy.

272. **Economic sustainability** of project investments will be conditional upon the achievement of long-term e objectives such as: (i) the promotion of economic models based on the circular economy which, as such, are able to convert waste into goods, and balance resource exploitation; (ii) the development of business plans demonstrating the economic return on investment and profitability of the supported businesses, and its potential for replication in other municipalities of the target landscapes and beyond; (iii) the development of climate-smart business models that facilitate access to international funds such as carbon credit markets and the Land Degradation Neutrality Fund among others. In this sense, the small businesses supported by the project - briquette factories, compost units, women-led food processing factories and agrifood-tourism establishments - will have carried out at the beginning of their activities, and with the support of the Task Force's economic experts, a viable business plan, including the expected growth and maturity of the business over the years. This will demonstrate that cooperatives and small businesses generate enough cash flow to stay in business and to finance growth to a size that is sufficiently large, given the market niche, to earn an economic return on our assets and labor. The business plans will use information available from existing businesses in the same field of work and from calculations made by ACS and local partners on the annual availability of resources for the proposed businesses over a time frame of at least 10 years, as is the case of the document "Bioenergy biomass management plan" which calculates the needs for sustainable growth of the briquette factories and the annual availability of agricultural and forestry biomass in the region over 10 years of business (Enciso, E., R. Colomer & P. Regato, 2015).

273. **Institutional sustainability** is ensured through the strengthening and capacity building of ACS (organisation with the permanent mandate from the MoE for the management of SBR and MHNR reserves) and of the Municipalities in the target area, combined with the engagement of the Ministry of Environment. On the one hand, the project will

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strengthen the capacities of ACS managers and technical staff in GIS mapping and climate resilience planning and risk reduction at the landscape/municipal and land use level; gender equality and women inclusion in stakeholders' engagement on climate adaptation; technical support and supervision of the implementation and monitoring of climate-smart actions for the areas with high climate risks in the target landscapes. On the other hand, the project will support the establishment of a coherent policy framework at the municipal level for the cross-sectoral integration of the climate-smart interventions, helping define the regulations and municipal ordinances needed to reduce climate risks, and harmonize/apply the climate-smart measures on ecosystem restoration, natural resources management, agriculture production and green business. In parallel, the project will organize training activities for public servants and staff from the nature reserves, on how to formulate policies, regulations and ordinances that landowners and users must respect, guaranteeing the sustainability of project results in terms of application of climate-smart measures.

274. **Replicability** will be further ensured by a strong ownership of local stakeholders, starting with the capacitation of a critical mass of extension providers and municipal staff to ensure continued delivery of support at local level. In addition to developing the social capital of targeted communities, the project will keep encouraging peer-to-peer exchanges and learning. The learning process at the core of the project is another guarantee of replicability, facilitating the capitalization of the trained trainers, methodologies, tools and approaches and their replication within the targeted municipalities, but also in other areas of the target districts, and in Lebanon as a whole.

275. **Exit strategy**. The project's exit strategy relies on the adoption of its approaches by all concerned stakeholders, and their progressive empowerment to autonomously implement and replicate proposed activities. As such, the project will allow the economic sustainability of local producer organizations and small enterprises by bolstering their business capacity and bargaining power, supporting further value addition (e.g. climate-smart branding strategy) and assuring the continuity of services by the DMOs and extension providers. The adoption of Climate Adaptation Strategies and regulations in municipal and protected area management plans will also ensure the uptake of the project's landscape-level prioritization approaches, and open the funding of investment priorities to additional sources (ACS Cedar Loan, Municipal budget, National budget, new aid agency projects, Land Degradation Neutrality Fund, Carbon credit markets, etc.).

K. Environmental and Social Impacts and Risks Relevant to the Project

276. The environmental and social screening presented in the table below provides a brief overview of the risk assessments detailed in the ESMP (Annex 3) and evidences the minor risks related to the project. The project is regarded to have a **moderate risk (Category B)** according to the Adaptation Fund's Environmental and Social Policy. According to IFAD's Environmental and Social Safeguards Screening Checklist, the proposed project is considered as a "**Moderate Environmental and Social Risk**" and a "**Moderate Climate Risk**". Annex 3 provides details about the project's Environmental and Social Management Plan (ESMP).

277. The project aims to identify and implement priority adaptation measures for the three target landscapes, in line with the priorities set forth by the GoL. The project complies with the relevant national legislation and the investments undertaken by the project will promote climate resilience and take into consideration the vulnerability of the target areas in terms of climate-risks such as exposure to forest fires, drought, high/low temperature extremes, flood, increased water shortages, land degradation, and their negative impact on income and livelihoods of rural poor. The proposed investments and capacity development support also aim to help climate vulnerable beneficiaries through sustainable and diversified sources of income, and by increasing awareness about climate- smart integrated landscape restoration and management, production systems and businesses as concrete adaptation responses to climate change impacts.

Table 31. Overview of the ESP risk assessment

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		The project as it is formulated complies with all national laws. The project will be executed by the ACS, which is a local NGO. The minor risk of non-compliance to the law (especially with regards to laws related to environment, forest and land resources, livestock, agriculture, gender, and labour) could come from service providers that will be contracted during implementation
Access and Equity		There is a minor risk that the selection of beneficiaries, particularly for matching grants, will be biased, leading to an inequitable distribution of benefits.
Marginalized and		Low risk.

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Vulnerable Groups		The project specifically targets marginalized and vulnerable groups whose livelihoods depend largely on agriculture or who are unemployed, with an integrated gender and youth approach. Syrian refugees present in the project area are supported by UNHCR through its Emergency Assistance Programme. In the current Lebanese economic crisis, they have more support than the vulnerable local population. The deterioration of the regional political conflict has affected the country, determining an increase in number of IDPs. This is an emerging phenomenon that cannot be comprehensively assessed for the time being, given the ongoing security conditions on the ground. Based on the security situation at implementation, the team will assess whether IDPs are present in the target areas and if so, conduct the needed consultations and assessments with the relevant stakeholders and local authorities and tailor the project activities accordingly, if needed.
Human Rights		The project is designed to respect and adhere to the requirements of all relevant conventions on human rights in compliance with the ESP. The 2022 report of OHCHR from the Special Rapporteur on extreme poverty and human rights includes the following priority recommendation: "Women's access to employment should be improved and the gender wage gap addressed."
Gender Equality and Women's Empowerment		As a result of an extensive consultation process, the design team identified a minor risk that the selection of beneficiaries, particularly for matching grants, could be biased towards male beneficiaries, leading to the discrimination of female beneficiaries.
Core Labour Rights		The project as it is formulated complies with all national labour laws. The project will be executed by the ACS, which is a local NGO. The minor risk of non-compliance to core labour laws could come from service providers that will be contracted during implementation
Indigenous Peoples	X	
Involuntary Resettlement	X	
Protection of Natural Habitats	X	
Conservation of Biological Diversity	X	
Climate Change	X	

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Pollution Prevention and Resource Efficiency		Low risk. The adoption of sustainable biomass management and regenerative agronomic practices by the target farmers will occur gradually, so that the pollution effects resulting from conventional practices (agrochemicals, burning of stubble, uncontrolled stacking of olive pomace waste from oil pressing, etc.) may partially persist in some localities in the first years of the project. The management of this problem will be carried out through training courses and awareness-raising actions at the beginning of the project, so that the farmers who benefit from the call for grants that are awarded in years 3 and 4 of the project already have information and knowledge to reduce pollution problems prior to accessing funding.
Public Health		Low risk. The implementation of fire risk reduction interventions in the target municipalities will occur gradually, so that the health problems resulting from smoke emissions of potential fires shall be gradually minimized as the project's biomass management activities progress. Furthermore, the production and availability of briquettes and raising awareness among local families to buy them and replace the use of diesel for heating and cooking, which causes a major health problem in homes, will follow a gradual process, with greater effect in the last years of the project. The management of this problem will be carried out through training courses and awareness-raising actions at the beginning of the project, so that fire ignition risk from agriculture waste burning – major cause of wildfires in the project area – may significantly reduce (farmers who participate in awareness-raising events and training programs will be able to avoid autumn burning of pruning remains, without having to have access to project funding) (farmers who benefit from the call for grants that are awarded in years 3 and 4 of the project already have information and knowledge to reduce pollution problems prior to accessing funding. Moreover, awareness sessions in the municipalities at the beginning of the project will also help to understand the problems and alternatives that families have to reduce health pollutants inside their homes.
Physical and Cultural Heritage	X	
Lands and Soil Conservation	X	

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PART III: IMPLEMENTATION ARRANGEMENTS

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A. Arrangements for project implementation

Institutional context

278. Lebanon is a highly centralised country, where the municipalities have only limited power and funds in real terms. The country has four administrative levels[125]:

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[125] https://portal.cor.europa.eu/divisionpowers/Pages/Lebanon-Introduction.aspx

- The central government controls most aspects of the planning and monitoring of local authorities, exercising both administrative and financial control over the municipalities through various ministries and bodies.
- The 6 governorates (Beirut, Mount Lebanon, North Lebanon, Beqaa, South Lebanon and Nabatieh), the 26 kaza or districts into which the governorates are divided. The governorates and districts act as administrative subdivisions of the State and have no independent authority.
- The 945 municipalities into which the districts are divided. About 660 municipalities have together set up 48 federations or unions, bringing together different municipalities with the aim of pooling their resources and fund inter-municipal development projects in their respective regions.

279. The following Lebanese entities hold a mandate relevant to land, natural resource and environmental management:

280. The **Ministry of Environment (MoE)** is the main entity in charge of environmental planning, the laws and their application. The MoE is the UNFCCC focal point for Lebanon; it oversees all climate change-related activities, coordinating, compiling, and submitting National Communications, Biennial Update Reports, and related greenhouse gas inventories. The National Council for Environment, (NCE) chaired by the MoE leads the implementation of the NBSAP[126], being responsible for providing environmental policy and planning, and developing criteria and guidelines for the management of protected areas and the implementation of environmental projects.

281. The **Ministry of Agriculture (MoA)** has the mandate to improve the performance of the agricultural sector and contribute to economic, social, environmental and sustainable rural development. The Department of Forest and Natural Resources at the MoA is responsible for forestry legislation and enforcement. It also manages rangelands and agricultural activities, designates protected forests, and regulates grazing permits and agreements on municipal lands. The MoA is also the UNCCD focal point for Lebanon. The **Lebanese Agricultural Research Institute (LARI)**, with 12 research centers, undertakes research on agriculture and provides extension services to farmers. The MoA is present in the target landscapes through the following institutions:

- Agriculture advisory departments in Zahle, Sahgbine and Machghara (Beqaa landscape); El Bireh (Rashaya landscape), and Deir el Qamar (Shouf landscape).
- Agriculture schools in Baakleen (Shouf) and Rashaya.
- Forest centres in Saghbine and Chtaura (Beqaa) and Rashaya.
- LARI center in Tal Amara (Beqaa) responsible for all agricultural consultation (seeds, weather forecast, soil tests and advisory services) and in Baakleen (Chouf), playing the same role in this district.

282. The **Ministry of Energy and Water (MoEW)** is responsible for energy, water, mines and quarries. MoEW developed a national plan to protect water resources from pollution, regulate water bodies, provide water use permits, and increase water stocks across the country. MoEW supports the development of renewable energy and energy efficiency in Lebanon. It also provides advice on the licensing of mines and quarries that could have an impact on water resources.

283. The MoEW **Regional Water Establishments** are responsible for: (i) the implementation, operation, maintenance and renovation of potable water supply, irrigation and wastewater; setting water tariffs for potable water supply and irrigation, taking into account socio-economic conditions; and quality control of potable water and water for irrigation. The communities in the Shouf landscape are administratively linked to the Beirut and Mount Lebanon Water Establishment with smaller water offices in Barouk and Beiteddine. The communities in the West Beqaa and Rashaya landscapes are administratively linked to the Litani River Establishment with smaller water offices in Zahleh and Rashaya.

284. The **Ministry of Industry (MoI)** provides (i) support to small and medium enterprises by improving business environments; (ii) businesses with access to finance, development services and incubation. (iii) accurate industrial statistics; (iv) promotes exports; (iv) develop measures to promote innovation.

285. The **Ministry of Economy and Trade (MoET)** controls food quality and prices at the retail market through the consumer protection service. It elaborates geographical indexing, copyright and patent laws, traceability of products and their regulations. The **Investment Development Authority of Lebanon (IDAL)** is the national agency entrusted with promoting investments to Lebanon in growth promising sectors (Agriculture and Agro Industry) by providing a set of incentives and services. IDAL is also entrusted with export promotion services.

286. The **Ministry of Public Works and Transport (MoPWT):** The Directorate General of Urban Planning (DGUP), under the authority of the MoPWT, issues building permits, prepares and reviews urban master plans, and implements the National Physical Master Plan prepared by the **Council for Development and Reconstruction (CDR)**, an independent and autonomous government entity. CDR developed the National Physical Master Plan of the Lebanese Territories (NPMPLT) in collaboration with the DGUP in 2005.

287. The **Ministry of Interior and Municipalities (MIM)** is responsible for planning and drawing up the municipalities' budgets, as well as for providing technical and financial assistance to municipalities where necessary. Development projects are usually carried out by the Council for Development and Reconstruction and employment-related decisions in the municipalities are controlled by the Civil Service Council.

288. The **Ministry of Education and Higher Education (MEHE)** is responsible for determining the policies and direction of the education system in Lebanon. It works closely with schools, universities and other educational institutions to

[126] National Biodiversity Strategy and Action Plan

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ensure that they are providing students with the knowledge and skills they need to succeed in their future careers.

289. The **Office of the Minister of State for Women's Affairs (OMSWA),** established in 2016, has the mission to empower, enhance and build the capabilities of women. Amongst other things, this will be achieved through mainstreaming women's rights in the sustainable national development process.

290. **Municipalities:** The Municipal Council, with members elected for a six-year term by universal direct suffrage, is the authority with decision-making power at municipal level. Under the tutelage of the Ministry of the Interior and Municipalities (MIM), municipalities are responsible for preparing annual plans based on available finance. They are in charge of operations and maintenance of water, sanitation, municipal solid waste, in addition to other matters concerning protection of the environment (e.g. reforestation projects) and pollution control through cooperation with various entities including NGOs. Construction permits in Lebanon are only issued by the President of the relevant municipality. Although the MoA is responsible for the enforcement of forestry regulations, this is usually orchestrated through the Municipal Police. The real power exercised in practice by municipalities is much less than the one conferred by law. In areas such as health, education, public works, social affairs, energy, water, agriculture and the environment, the ministries generally coordinate the specific projects together with the municipality, however the ministries remain responsible for their implementation. In the current situation of political and economic crisis, the central government is very absent at the local level, and the municipalities have acquired a primary role in the implementation of all types of territorial management priorities. In some cases, such as in Shouf, Qaraoun and Rahsya, municipal unions have been established to be more effective in utilizing available resources and implementing priorities.

291. **Protected Areas' Management Bodies**: The Shouf Biosphere Reserve and Mount Hermon Reserve are under the authority of the Lebanese Ministry of Environment (MoE), which manages them through **Appointed Protected Area Committees (APAC)**. The committees include among its members the Al-Shouf Cedar Society, representatives of the municipalities and municipal unions, representatives of local users and organizations, representatives of local forest and agriculture institutions, NGOs, academia and independent experts. APAC liaises with the Reserve' Management Team, which deals with the day-to-day management and planning.

292. **Non-governmental Organizations:** The Lebanese NGOs played a prominent role in the past 30 years on key environmental and development issues and projects with support from local and international donors. **Al-Shouf Cedar Society (ACS)** plays a major role in the management of the Shouf/West Beqaa Biosphere Reserve (SBR), through the development of multi-year plans for the conservation of biodiversity, the management and restoration of natural resources, and sustainable local development. ACS has raised substantial funding from aid agencies, international foundations, and the private sector, and led numerous projects on forest landscape restoration (FLR); spatial planning and land tenure issues; sustainable agricultural development; sustainable management of forests and pastures; sustainable management of water, energy and urban/agriculture/forest waste; restoration of abandoned quarries; conservation of habitats, flora and fauna; rural employment and business development; poverty alleviation. ACS works in cooperation with local municipalities and municipal unions, MoA extension and research centres, education centres, NGOs, and enterprises. National level partners are the MoE, MoA, MoEW, MoPWT, universities national NGOs, and enterprises linked to tourism, water, agriculture, food, transport and the banking sector. Among international partners are the IUCN; the Kew Gardens; the European Topic Centre on Spatial Analysis and Synthesis (ETC-UMA); and several Italian, Spanish, and French NGOs. In the framework of the EU funded BioConnect project, ACS has established a branch organization for the management of the Mount Hermon nature reserve, with the aim of acquiring management autonomy once the project is completed. Other NGOs playing a role on natural resources management in the target landscapes are the Lebanon Reforestation Initiative (LRI), the Association for the Development of Rural Capacities (ADR), Arcenciel, Association for Community and Environment (ACE), the Association for Forest, Development and Conservation (AFDC), Life for Environment (LFE), and the Society for the Protection of Nature in Lebanon (SPNL), Green Orient (GO), and B- West; the Italian NGO Istituto Oikos.

293. **Private organizations:** Fair Trade Lebanon; the social enterprise Souk El Tayeb; MORES consultancy firm; local producer organizations, cooperatives and enterprises engaged in the production of goods and services linked to tourism, water, energy, non-timber forest products, meet and dairy, and farmland crops; Khaled Sleem Tree Nursery and AFDC Tree Nursery in the Shouf; Samaha Tree Nursery in the West-Beqaa; wineries in the Beqaa landscape; Nestle Waters; Rebibir Farmers Association in Extremadura (Spain) that has supported successful pilot interventions on biodynamic agriculture in the Shouf; the Spanish FILS/Colomer Association (former Barbol) involved in successful native tree nursery production interventions in the Shouf and West Beqaa landscapes; Altromercato Fair Trade Italian Enterprise involved in the export of organic oregano from the Shouf landscape, etc.

294. **Development Agencies**: The most active agencies supporting environmental, cultural and sustainable development issues in the target area are the Italian Cooperation, the French Agency for Development, the GIZ, the European Union, and USAID, among others.

295. **United Nations**: The most active UN organizations supporting environmental, cultural and sustainable development issues in the target area are FAO, UNDP, WFP, the WB, IFAD and UNESCO.

Arrangements for the project implementation

296. Al Shouf Cedar Society (ACS), the institution responsible for the management of the Shouf Biosphere Reserve and Mount Hermon Nature Reserve, will be the executing entity for the AF project ACS will count on the collaboration of a broad array of local public and private partners. The Ministry of Environment (MoE) will be the National Designated Authority (NDA) and will chair the AF project steering committee.

297. Management Unit (PMU) in the Al Shouf Cedar Society (ACS) headquarters in the SBR and MHNR for execution. The PMU will rely on ACS current project management unit, including qualified staff on climate-adaptive natural

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resources management, business development, social learning, monitoring and evaluation, multi-stakeholders' participation and gender issues. PMU staff will ensure equal representation of women and men. The project will establish a Project Steering Committee (PSC) chaired by the Ministry of Environment, or its designated representative, and including key staff from key project partners, whose responsibility will be approval of the annual work plans and budgets (AWPBs) as well as serving as a coordination body.

298. ACS will be responsible for the day-to-day management and execution of project activities, including overall administration, fiduciary aspects, procurement, monitoring and evaluation. The SBR and MHNR Appointed Protected Area Committees, which include representatives of key public and private institutions in the target landscapes, will play a major role, among others on: (i) intensive community mobilization through awareness raising and consultation events in each landscape to introduce the project objectives, outcomes and expected results, key issues on climate change impacts, resilience and adaptation, and the project implementation mechanisms; (ii) organization of participatory workshops for the prioritization of high climate-risk interventions areas, the selection of priority climate-smart interventions; (iii) organization of information events on learning and financing opportunities supporting the project beneficiaries' investments on climate-smart management practices and climate-proof businesses; and (iv) ensuring the development of proper management, workplans and budget by the PMU. It is expected that the capacitated landscape governance structures will play an increasing role in supporting the implementation of the project, guaranteeing its sustainability.

299. The PMU will be vested with financial and technical autonomy. Its proposed staffing will encompass:

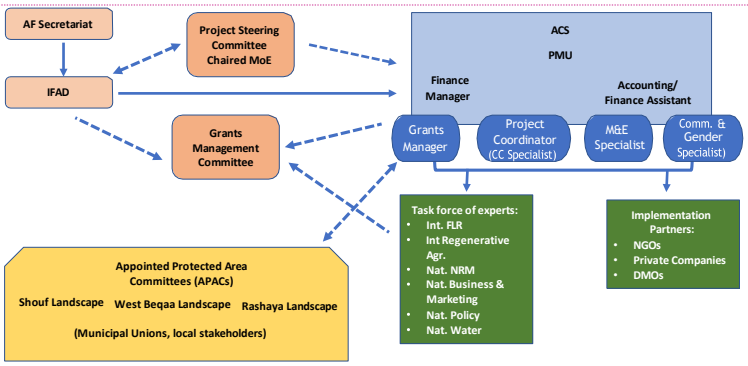
- Project Coordinator, with expertise in managing climate change adaptation projects in rural landscapes.
- Finance and Admin Manager
- Accounting and Finance Assistant

300. Additionally, the project will hire expertise within its components to implement concrete interventions: (i) Grants manager, to take care of the grant programme supporting investments for local beneficiaries; (ii) Monitoring & Evaluation Specialist; (iii) Communication and Gender Specialist.

301. The PMU will be supported by a task force of 6 experts (50% women) with demonstrated solid experience of work in the target landscapes (4 national experts on natural resources management, efficient water equipment and infrastructures; policy development, climate-proof business & markets; and 2 international experts on FLR and climate-smart regenerative agriculture systems), who will lead key project interventions, such as the development of guidelines and protocols for climate-smart solutions, the development of self-assessment protocols, the development and delivery of training programs, the provision of regular field technical assistance to the project beneficiaries, among others.

302. The PMU will subcontract through call for tenders the biomass management and ecosystem restoration works to NGOs and/or consultancy firms with solid knowledge in these matters and experience in carrying out this type of work in the project area or other areas of the country.

Figure 18. Implementation arrangements



303. The project grants to support investments in climate-smart agriculture by the project beneficiaries will be coordinated by a Grants Manager, who will organize awareness-raising actions, information, calls for applications, etc., and a Grants Committee that will carry out the selection of applications according to established selection criteria, and will approve the instalment payments based on the good execution of the grants. The provision of grants will rely on the managing structure and mechanisms established by ACS for its Cedar Loans, and by other organizations active in the target landscapes (e.g. UNDP, USAID).

304. The targeted municipalities and municipal unions, the MoA local institutions (agriculture advisory departments,

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schools and research centres, and forest centres), and the local Water Establishment offices, will play a major role in steering the implementation and respect by the project beneficiaries of the policy regulations supporting climate-smart land uses and management practices in the target landscapes.

305. Under component 2, farmer & forest field and business schools will be implemented with the support of the MoA extension staff and the task force of experts, following a peer-to-peer approach involving as international experts, a number of farmers and foresters with demonstrated knowhow on climate-smart management practices and businesses in their properties. The development of climate-smart forest and agriculture management plans will also benefit from the technical support of Balamand University and Saint Joseph University. A detailed due diligence on ACS will be conducted at design stage to assess their capacity to manage and monitor the environmental and social risks connected with external financing. Finally, the development and dissemination of Guidelines for climate-smart management of agriculture, forest and pastoral land will entail a strong coordination with relevant Ministries.

306. The project implementation manual (PIM) will provide clear descriptions of tasks and responsibilities for the individual team members of the PMU and include procedures to carry out annual performance evaluations for all key staff. Contracts for the PMU members will be renewable annually, upon satisfactory performance.

307. **Implementation Arrangement Alignment with AF Gender Policy**. The Communication & Gender Specialist will be responsible for gender and social inclusion issues (overseeing the implementation of the gender strategy, building the capacity of staff and helping colleagues to address considerations related to gender equality and women's empowerment in their operations, including knowledge management, M&E, indicators and measurement of results). Dedicated budget has been allocated to address these issues, as well as to ensure the mainstreaming of gender considerations into all project activities. The following arrangements will guarantee that gender is taken into account in the implementation of the project: (i) the gender strategy and action plan (Annex 4); (ii) gender parity in the PMU will be encouraged; (iii) quotas for women (at least 30 percent) and youth (at least 30 percent) as a percentage of beneficiaries, and all collected and analysed data will be disaggregated by sex and gender; (iv) information campaigns and outreach events targeting women and youth will be carried out during project implementation; (v) Female and young trainers will be mobilized; (vi) studies undertaken by the project will include a gender and age perspective; (vii) responsibility for gender mainstreaming will be included in the terms of reference of all key project staff and project service providers. Compliance with IFAD's policy on preventing and combating sexual harassment, exploitation and abuse will be sought in all project interventions. This will be reflected in the terms of reference of all project staff and service providers.

308. IFAD, as the Implementing Entity, will undertake the oversight and quality control of the project. A mid-term review will be conducted to evaluate the project's progress, identify areas for further improvement and revise the project approach.

B. Financial and project risk management

Financial risk

309. At country level, the fiduciary inherent risk is high. Economic crisis continues with high unemployment, poverty and disruption of critical public services[127]. The neighbour conflict exacerbates the economic situation and the outlook is uncertain. There has been progress in lowering inflation and stabilising the exchange rate. However, banking crisis persists, bank deposits remain frozen and banks are unable to provide credit, giving rise to cash-based and informal economy and risks of illicit activities. Progress on key reforms for governance, transparency and accountability of the public sector remains limited. In 2023, Lebanon scored 24 (high risk) in the Corruption Perception index[128] (on a declining trend in the last decade) and ranked 149 (out of 180 countries). At portfolio level, IFAD experienced implementation delays for weak government systems, difficult project ratification, slow start-up and late disbursement to projects though the Treasury Single Account

310. At project level, the engagement of ACS as PMU represents an opportunity for faster start-up and agile implementation. On the basis of preliminary fiduciary assessment[129], ACS has an experienced financial management (FM) staff and fairly adequate internal control procedures and policies. Although no prior experience with IFAD, ACS has implemented several projects (7 currently on-going in 2024-25) with both bilateral (i.e. USAID, UKAID, AICS, GIZ) and multilateral (i.e. EU) financing. Accounting follows IFRS accrual basis and ACS is well versed in reporting according to Donors' templates. An accounting software is adopted and compliant with Government Chart of Accounts (CoA), however sub-optimal manual accounting is still performed to comply with donor's CoA/reporting. External Audit is carried out by private firms (based on ISA standards) and opinions on the ACS consolidated reports (FY 2021 and 2022) were unqualified, although the lack of Management Letters requires better alignment to ISA (e.g. via improved Audit ToRs). ACS operates bank accounts in LBP, USD and EUR, held at a commercial bank (i.e. Bank of Beirut and Arab Countries), donor's fund can flow into segregated designated accounts (DA) and this facilitates regular bank reconciliations. Cash payments and transactions in local currency are minimised. Most of the transactions are in USD, the currency mostly adopted in country, considering the high volatility of the exchange rate LBP/USD experienced in the economic crisis during 2019-2021. Project DAs are used to do payments in USD (whereas, separate project accounts are used for payments in LBP). VAT/tax is paid either in LBP or USD and ACS is VAT exempted under some projects (i.e. EU) based on separate request of the Donor to GoL (e.g. this may be explored for E-Connect). Transfers to sub-recipients are regulated by specific sub-contracts. There is beneficiaries' co- financing to ACS's projects in-cash and in-kind. Any in-kind contribution to E-Connect will be captured in the Notes to the Financial

[127] IMF Press Release n.24173 – IMF Staff visit to Lebanon – May 2024

[128] Transparency International

[129] FM due diligence carried out by IFAD Finance Officer (March 2024) - available on IFAD-FMDB dashboard

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311. E-Connect is expected to leverage on ACS FM experience and additional specific measure to mitigate FM risk will be indicated in the Grant Agreement (i.e. including conditions for disbursement), such us: (i) segregated designated account; (ii) agreed Interim Financial Reporting (including cash forecasting) as a basis, quarterly, for expenditure justification and funds withdrawal through on-line submission of withdrawal applications; (iii) annual external audit of IFAD's Project Financial Statements (with audit terms of reference subject to IFAD no objection) and submission within 6 months from end of fiscal year. Considering the country context, overall inherent Project FM Risk is deemed substantial and residual FM risk will be revised as the mitigating measures are timely implemented.

312. Other project risks and mitigation measures are included in the table below:

Table 32. Risk Assessment Matrix

Risk	Initial Risk Assessment	Proposed Mitigation Measures	Final Risk Assessment
Geopolitical: Continued conflict in country affecting the target area of the project	High	The country experiences political instability and active conflict that may result in delays or ineffective implementation of the project interventions. CC-REC is aligned with the government development goals and actively engages with stakeholders and relevant Ministries. In parallel, the project collaborates extensively with decentralized authorities in the targeted rural areas. This will engender solid political will to support the project in target regions, enhancing its success. Geopolitical and security issues remain significant; however, these have been addressed to the extent possible in promoting a community-based and decentralized approach to delivery. At project start-up a security assessment will be conducted in consultation with UNDSS to assess whether activities can be initiated in target areas. Accordingly, the project can follow a phased approach to implementation based on the security levels in the target areas. If security allows, the project will be implemented as is with continuous monitoring of the situation.	High
Institutional: Weak capacity of public institutions for implementation and sustainability (as a result of prolonged fragility)	High	The project is implemented through a local NGO that is well established and have strong proven capacity in implementing similar interventions by international donors. IFAD will provide technical assistance and regular supervision to ensure that project implementation proceeds as planned, and in line with fiduciary and quality standards. The NGO will collaborate with institutions at the local level, such as Municipalities and governmental entities, as well as community-based organizations. Key relevant ministries will be involved in the project steering committee to ensure ownership and sustainability of project results.	Moderate
Climatic: Climate risks (changes in temperature and rainfall resulting in increased flooding and fire risks)	Moderate	CC-REC will employ an adaptive management approach to promote climate-smart agriculture, ecosystem restoration initiatives, and fire risk mitigation measures to help offset climate risks. Active restoration interventions will be timed to maximize water availability for plants.	Low

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Fiduciary risk: Weak Procurement and Financial Management	High	Financial Management and Procurement risks correspond to any potential mismanagement of funds. IFAD will ensure that all financial management and procurement processes are conducted according to IFAD policies and standards, with financial audits conducted on a yearly basis. The Executing Entity of the project is a local NGO with the required financial and procurement systems needed to implement the project in line with IE standards that will be continuously assessed by IFAD.	Moderate

C. Environmental and Social Risk Management

313. IFAD-funded projects and programmes are designed in a participatory manner, taking into account the concerns of all stakeholders. IFAD requires that projects are carried out in compliance with its policies, standards and safeguards. Moreover, IFAD's Strategic Framework calls for ensuring that projects and programmes promote sustainable use of natural resources, build resilience to climate change and are based upon ownership by rural women and men themselves in order to achieve sustainability. As shown in Annex 3 (ESMP) the project design was assessed in compliance with the Adaptation Fund Environmental and Social as well as Gender Policies, and was additionally assessed through the social, environmental and climate assessment procedures (SECAP) of IFAD (which are fully aligned with the AF Environmental and Social as well as Gender Policies). Following the ESP screening in Annex 3 (ESMP), the project has been categorised as a **Category B** (equivalent to the IFAD/SECAP **"moderate risk" category** with regards to Environmental and Social Risk, and to Climate Risk classification).

D. Monitoring and Evaluation

314. **Project Monitoring and Evaluation (M&E)** will be under the oversight of the PMU and led by the M&E officer who will work closely with the task force of experts, the grants manager and beneficiaries, and the implementing partners in charge of the biomass management and ecosystem restoration interventions. The M&E system should: (i) produce, organize and disseminate the information needed for an *adaptive management* of the project, (ii) document the results and lessons learned for internal use and for public dissemination on the achievements and (iii) respond to the information needs of Adaptation Fund, IFAD and the GoL on the activities, outcomes and impact of the Project. A monitoring and evaluation manual describing a simple and effective system for collecting, processing, analysing and disseminating data will be prepared during the first year of project implementation. The M&E system will follow a gender-responsive monitoring approach by assessing and reporting on the implementation of the disaggregated indicators developed in the Gender Action Plan and results framework. More details are provided in Annex 3.III, under Principle 6. The M&E system will further monitor the implementation of the safeguarding measures through the indicators listed in the dedicated section in Annex 3.

315. A computerized database will be developed to enable the generation of dashboards. The database will provide precise spatial indicators for essential project climate resilience activities, such as forest fire risk reduction, flood risk reduction, water scarcity mitigation, and climate change adaptation. The system will be regularly fed from data collected in the field by the PMU team, experts of the task force, trained trainers (providers of training and extension services to the project beneficiaries), project grantees, and implementing partners, as well as from the various studies, mappings and policy products carried out as part of the projects' implementation. The monitoring and evaluation system will be coupled with a geo-localized Geographic Information System (GIS) and Remote Sensing (RS) that will allow mapping and spatio-temporal analyses to generate spatial indicators such as NDVI (Normalized Difference Vegetation Index), LST (Land Surface Temperature), Change Detection, Vegetation Health Index, Fire Weather Index, Evapotranspiration rates, soil humidity, and the Built-up Index. These GIS/RS data will be integrated with measurements collected in the field on climate resilience environmental, social and economic indicators – gender disaggregated - linked to the climate-smart interventions in the target landscapes.

Climate-smart Solution	Topic	Type of indicator & metric	Project target	Measurement	
				Method	Freq.
	Climate-risk reduction	# Hectares of critical fire-risk areas managed	100	F/RS	Annual
		% Estimated reduction of future burned area	50	RS	Project end
		# Hectares of farmland buffering very dense forest stands where agriculture waste is collected	490	F	Annual

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Integrated biomass management to reduce climate-induced fire risk		Volume (tons) of biomass harvested	7,000	F	Annual
	Environment	# Hectares of managed forest stands with protected regeneration of diversified tree species/lifeforms	Baseline to be defined (TBD)	F	Annual
		Index of Biodiversity Potential (IBP) (several attributes on forest species diversity, vertical structure, age classes, deadwood, etc.)	TBD	F	Annual
	Social	# Local professional workers employed in forest management	280	F	Annual
		# Smallholder households with access to sustainable energy	1,000	F	Annual
		# Smallholder households (≤ 1 ha) with access to compost	330	F	Annual
		% Reduction of energy cost for local people	50%	F	Project end
	Economic	Volume of products and/or income generated by biomass-related businesses (briquettes, compost, dairy products)	To be disaggregated based on project data.	F	Annual
		% Increased yield of non-timber forest products	TBD	F	Project end
Freshwater ecosystem restoration (FWER)	Climate-risk reduction	# Hectares of water courses in critical flood-risk areas restored	20	F/RS	Annual
	Environment	% Survival rate of each freshwater species planted	70	F/RS	Annual
		Changes in key FW species attributes	TBD	F	Project end
	Social	# Local professional workers employed in restoration work	80	F	Annual
		# Smallholder farmland hectares buffered by FWER	200	F/RS	Project end
	Economic	Volume of seedlings generated by local tree nurseries	20,800	F	Annual
Silvo-pastoral restoration	Climate-risk reduction	# Hectares of degraded pastures in critical climate-risk areas restored/sustainably managed	60	F/RS	Annual
	Environment	% Survival rate of each species planted	70	F/RS	Annual
		Changes in key wild species attributes	TBD	F	Project end
	Social	# Local professional workers employed in restoration work	192	F	Annual
	Economic	% Increase in output of livestock products	5-20	F	Annual
		Volume of seedlings generated by local tree nurseries	62,400	F	Annual
	Climate-risk reduction	# Farmland hectares of critical climate-risk areas under climate-smart regenerative agriculture production	100	F/RS	Annual
		# Climate-adapted species and varieties used in agriculture production	TBD	F	Annual

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Climate-smart agriculture production	Environment	% Soil health improvement (water, organic matter, structure, and microbiota)	20%	F/RS	Project end
	Social	% Reduction in time, labor and fossil fuels	30-40	F	Project end
	Economic	% Increase in revenues from diversified production/processing and agritourist services	20%	F	Annual
		Volume of seedlings of climate-adapted crop species/varieties generated by local tree nurseries	114,800	F	Annual

316. In the framework of the EU-funded Bioconnect project, ACS has subcontracted to a consortium of national experts an action on "Biodiversity monitoring scheme for Mount Hermon Nature Reserve and Shouf Biosphere Reserve". This action includes a training program (planned for July-October 2024) to equip the teams of ACS and Mount Hermon Reserve with the necessary skills to effectively apply Geographic Information Systems (GIS) and Remote Sensing (RS) tools in the continuous cycle of monitoring, analysis, reporting, learning, and adjusting management techniques and approaches. Field training sessions for reserve guards and other technical staff on the use of tools like GPS and surveying equipment will also be conducted. Self-assessment protocols and tools so that landowners and land users monitor their progress in the adoption of climate-smart practices and management systems will be provided by the task force of experts through training and continuous field technical assistance.

317. **Project Inception Workshop**. A project inception workshop will be conducted within two months of project start up with the full project team, relevant government counterparts and IFAD. The inception workshop is crucial to building ownership for the project results and to plan the first-year annual work plan and budget (AWPB). A fundamental objective of the Inception Workshop will be to present the modalities of project implementation and execution and assist the project team to understand and take ownership of the project's goals and objectives.

318. The PMU will prepare a draft **project inception report** including: (i) a narrative on the institutional roles and responsibilities and coordinating action of project partners; (ii) progress to date on project establishment and start-up activities, and (iii) an update of any changed external conditions that may affect project implementation. It will also include a detailed first year AWPB quarterly divided detailing the activities and progress indicators that will guide implementation, and the budget and procurement plan for the first 18 months of implementation, prepared on the basis of the Annual Work Plan.

319. **Baseline study**. A baseline study will be conducted within the first year to collect data and serve as the basis for the assessment of how efficiently the activity has been implemented and results achieved. The study will include the target group and a control group which will be essential to determine the attribution of results to project activities.

320. **Quarterly Progress Reports** will be prepared by all project implementing partners and service providers and submitted to the PMU who will consolidate them to ensure a continuous monitoring of project activities and identify challenges to adopt necessary corrective measures in due time. **Technical reports** such as climate-smart management guidelines and protocols, best practices and lessons learned, and other knowledge products together with all communication material will be produced by the project team and task force of experts. **Semi-annual progress reports** will be elaborated based on the quarterly progress reports and periodical technical reports and used as a reference ahead of supervision mission or for the preparation of Annual Project Reports.

321. **Project Performance Report (PPR)**. The project will submit a PPR each year to chart progress achieved in meeting the project's Annual Work Plan and assess performance of the project in contributing to intended outcomes through outputs and partnership work, using the Adaptation Fund template. The PPR includes among others, (i) an analysis of project performance over the reporting period (tracking project indicators), including outputs produced and, where possible, information on the status of the outcome; (ii) lessons learned and constraints experienced in the progress towards results and the reasons for these; (iii) risk assessment; (iv) information related to financial data and procurement (expenditure reports); (v) ratings; (vi) clear recommendations for future orientation in addressing key problems in lack of progress. In addition, it includes the results tracker that needs to be filled. This will be done i) at inception where baseline-related information will be submitted, as well as planned targets at project completion; ii) at mid-term; and iii) at project completion when the final PPR will serve as a project completion report; but also include the final evaluation report and final audited financial statements.

322. **Supervision** will be organized by IFAD (under its direct Supervision framework and guidelines), with a Supervision mission mobilized at least once per year. Additional implementation support from IFAD on specific identified issues will be mobilized if considered necessary by GoL and IFAD or recommended by the Supervision mission. The composition of the Supervision missions will be based on an annual supervision plan. The supervision plan will highlight, in addition to the routine supervision tasks (fiduciary, compliance and project implementation), the main thematic or performance areas that require strengthening and would imply deployment of additional inputs for capacity building, in-depth analytical studies or review of existing policies.

323. **Mid-term Review (MTR)**. It will be carried out in the first half of year 3. It will assess operational aspects such as project management and implementation of activities as well as the extent to which the objectives are being fulfilled and corrective actions needed for the project to achieve impact.

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324. **A Final Evaluation** will be conducted three months before project closure and will include the project completion survey. **The Project completion survey** will include the same set of questionnaires included at baseline to allow for comparison against baseline results. In addition, a panel of households will be interviewed to provide a thorough analysis of project effects. Moreover, the analysis will be disaggregated by type of beneficiary, municipality and gender of household head. As part of the evaluation, stories, lessons learned, and best practices will be collected for upscaling and dissemination.

Breakdown of M&E Supervision	Responsibility	Timeframe	Budget
Contribution of Project Execution Costs to M&E			
Baseline study	PMU	First year (2025)	21,600
Annual workplan and budgets	PMU	Annual	4,000
Quarterly progress report	M&E officer and other PMU members	Trimestral	M&E salary 53,200
Semi-annual progress report	M&E officer and other PMU members	Semestral	
Annual project progress reports (PPR)	M&E officer and other PMU members	Annual	
Project completion survey and process	PMU	2028	30,000
Final Evaluation	PMU, external consultant	2028	20,000
Total			**128,800**
Contribution of IE Fees to M&E			
Supervision visits	IFAD	Annual	50,000
Mid-term review	IFAD, external consultants	2026	20,000
Total			**70,000**
Grand total			**190,800**

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E. Results framework

Objective and expected outputs	Indicators	Unit	Targets				Means of verification			Assumptions
			Ref.	Y1	Mid-term	Y4	Source	Frequency	Responsibility	
Project Objective: Restore climate-smart landscapes and support resilient livelihoods in the Shouf-West Beqaa- Mount Hermon corridor through the adoption of nature-based solution	Natural Assets Protected or Rehabilitated (AF Core Indicator)[130]	Hectare	0	0	900	1,598	MTR and Completi on survey, GIS/RS analysis	At mid-term & completion	M&E officer	Initial and continued political commitment and support to project implementation. Political and economic conditions do not deteriorate or improve.
	Number of beneficiaries (direct/indirect) (AF Core Indicator)	Person	0/0	0/0	20,000/ 50,000	46,860/ 155,836				
		Woman	0/0	0/0	6,000/ 25,000	14,058/ 77,918				
Component 1. Capacity development and policies for resilient landscapes and livelihoods.										
Outcome 1.1. Local beneficiaries empowered to adopt climate-smart nature resource management, agriculture production, and marketing through capacity development	% of households reporting adoption of climate-smart management systems, technologies and practices	% HH	0	0	50	80	MTR and Completion survey	At mid-term and completion	PMU, Task Force of experts, M&E	Project ability to mobilize a critical mass of extension providers with interest on climate-smart ecosystem restoration, sustainable management, production systems and businesses.
Output 1.1.1: Set of technical guidelines and protocols for climate- smart natural resource management, sustainable agriculture, and green marketing produced by a team of national and international experts	Number of climate-smart management models with developed gender-inclusive guidelines and protocols	Model	0	0	6	6	Technical documents	At mid- term and completion	PMU, Task Force of experts, M&E	Landowners and land users willing to switch from conventional, maladaptive practices and businesses to climate-smart ones.

[130] Disaggregation by type and level of effectiveness detailed in Annex 7

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Output 1.1.2: Training of trainers' program implemented, based on the guidelines and protocols produced	Number of trainers enabled to support landowners and land users on climate- smart ecosystem management and restoration, and production systems	Person (Total)	0	0	90	90	Training and evaluation documents	At mid- term & completion	PMU, Task Force of experts, M&E	
		Woman	0	0	27	27				
Output 1.1.3: Full capacity development program implemented, targeting the direct beneficiaries in the landscapes	Number of project beneficiaries trained on climate-smart ecosystem restoration and management, and agriculture production and marketing	Person	0	0	454	454	Training and evaluation documents	At mid- term & completion	PMU, Task Force of experts, M&E	
		Woman	0	0	136	136				
Outcome 1.2: Climate- smart policies and regulations adopted by the municipalities and protected area authorities of the landscapes.	Percentage of municipalities empowered to formulate and implement climate-smart policies and regulations	% Municip alities	0	0	50	80	Municipal document s; Field data	At mid- term & completion	PMU, Task Force of experts, M&E	Political and economic instability do not deteriorate preventing municipalities to remain operative. Target municipalities willing to join the project.
Output 1.2.1: Policy recommendations for mainstreaming the climate-smart priorities into landscape-level plans developed and adopted.	Number of municipalities and PA authorities that issue and adopt policies and regulations supporting CC adaptation	Institution	0	0	25	38	Municipal documents; Field data	At mid- term & completion	PMU, Task Force of experts, M&E	Proposed municipal regulations and ordinances are adhered/enforced. Policy makers' willingness to learn from project experience.

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Component 2: Nature-based solutions for environmental, social, and economic sustainability.										
Outcome 2.1: Ecosystem restoration and adaptive agriculture solutions implemented in critical climate risk areas of the landscapes.	Number of hectares of natural/semi-natural ecosystems under integrated restoration and sustainable management	Hectare	0	0	300	690	GIS/RS analysis; Field data	At mid- term & completion	PMU, Task Force of experts, M&E	Climate change patterns are according to current predictions. No political interference in the choice of investments. Knowledgeable technical expertise can be mobilized to train and coach landowners and land users on climate-smart restoration, management practices and businesses.
	Number of hectares of farmland restored and managed following climate-smart regenerative agriculture	Hectare	0	0	508	908	GIS/RS analysis; Field data	At mid- term & completion	PMU, Task Force of experts, M&E	
Output 2.1.1: Priority ecosystems restored and managed in each landscape following the agreed guidelines.	Number of municipalities/people benefiting from fire-risk reduction	Village/ person	0	0	10/20,000	20/46,860	Municipal documents; Field data	At mid- term & completion	PMU, Task Force of experts, M&E	
		Woman	0	0	6,000	14,058				
	Number of farmers benefiting flood-risk reduction	Person	0	0	100	200	GIS/RS analysis; Field data	At mid-term & completion	PMU, Task Force of experts, M&E	
	Number of shepherds supported in resilient pastoral practices	Person	0	0	20	60	GIS/RS analysis; Field data	At mid-term & completion	PMU, Task Force of experts, M&E	
	Number of water reservoirs rehabilitated or constructed	Structures	0	0	4	4	GIS/RS analysis; Field data	At mid- term & completion	PMU, Task Force of experts, M&E	
Output 2.1.2: Priority smallholder farmland production systems restored and managed in each landscape following the agreed guidelines.	% of total farmers receiving grant funding reporting adoption of climate-smart regenerative agriculture technologies and practices	% Person	0	0	50	80	GIS/RS analysis; Field data	Annually	PMU, Task Force of experts, M&E	
		% Women	0	0	15	30				

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Outcome 2.2. Innovative marketing strategies and value chain improvement measures adopted for key products and services in the landscapes.	Percentage of the supported rural enterprises reporting an increase in profit (AF Core Indicator)	% Enterprises	0	0	50	80	MTR and Completion survey	At mid-term and completion	PMU, Task Force of experts, M&E	
Output 2.2.1: Brand marketing strategy for climate-smart commodities developed in each landscape, based on existing best practices	Number of active DMO Platforms	Platform	0	0	3	3	DMO committee reports	Annually	PMU, Task Force of experts, M&E	
Output 2.2.2: Local value chains and agrobusiness established/improved based on climate-smart criteria.	Number of new/existing businesses established/adapted to climate-smart criteria	Business	0	0	9	18	Enterprise registers; Field questionnaires	Annually	PMU, Task Force of experts, M&E	National policies supportive for the selected value-chains. Smallholders' and VC actors' willingness to participate. Climate- proof business and market experts' ability to respond to technical support requests by smallholders. Relevance of selected commodities with regards to climate change adaptation.
	Number of households with reduced cost and pollution thanks to the adoption of renewable energy sources	HH	0	0	500	1000	Municipal documents; Field data	At mid- term & completion	PMU, Task Force of experts, M&E	
	Number of people involved in local businesses for the processing and marketing of selected climate-smart branded commodities	Person	0	0	300	566	Enterprise registers; Field questionnaires	Annually	PMU, Task Force of experts, M&E	
		Woman	0	0	90	170				
	Percentage of women-led businesses for the processing and marketing of agrifood products	% Businesses	0	0	50	100	MTR and Completion survey	At mid-term & completion	PMU, Task Force of experts, M&E	
Component 3: Climate-resilience assessment, knowledge management and awareness raising.										
Outcome 3.1. Project practitioners enabled to assess co-benefits of climate-smart landscape interventions	Percentage of beneficiaries that have adopted the self-assessment protocols and tools	% Person	0	0	50	80	MTR and Completion survey	At mid-term and completion	PMU, Task Force of experts, M&E	

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Output 3.1.1: Protocols and tools for self- assessment of impacts and co-benefits of climate-smart interventions developed and applied by project practitioners.	Number of beneficiaries that have learned and applied in the field the self- assessment protocols	Person	0	0	350	725	Field questionnaires	Annually	PMU, Task Force of experts, M&E	Landowners and land users willing to switch from conventional, maladaptive practices and businesses to climate-smart ones.
		Woman	0	0	105	217				
Outcome 3.2 Project practices and lessons learned disseminated through awareness raising.	Number of people reached by the project's communication work	Person	0	0	70,000	155,836	MTR and Completion survey	At mid-term & completion	PMU, Task Force of experts, M&E	Awareness raising actions are effective, tailored the right audience, and built onprecise and effective communication
		Woman	0	0	35,000	77,918				

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F. Alignment with Adaptation Fund Results Framework[131]

Project Objective(s)1	Project Objective Indicator(s)	Fund Outcome	Fund Outcome Indicator	Grant Amount (USD)
Promote the adoption of nature-based solutions to restore climate-smart landscapes and livelihoods in the Shouf-West Beqaa-Mount Hermon corridor	1,598 ha of landscapes restored and/or under sustainable management practices. 9,372 households with an increased resilience to climate change.	Outcome 3: Strengthened awareness and ownership of adaptation and climate risk reduction processes at local level	% target population aware of predicted adverse impacts of climate change, and of appropriate responses % target population applying appropriate adaptation responses	646,087
		Outcome 5: Increased ecosystem resilience in response to climate change and variability-induced stress	Ecosystem services and natural resource assets maintained or improved under climate change and variability-induced stress	1,643,558
		Outcome 6: Diversified and strengthened livelihoods and sources of income for vulnerable people in targeted areas.	% target population with sustained climate-resilient alternative livelihoods	1,215,000
		Outcome 7: Improved policies and regulations that promote and enforce resilience measures	Climate change priorities are integrated into national development strategy	82,500
Project Outcome(s)	**Project Outcome Indicator(s)**	**Fund Output**	**Fund Output Indicator**	**Grant Amount (USD)**
Outcome 1.1: Local beneficiaries empowered to adopt climate-smart nature resource management, agriculture production, and marketing through capacity development.	80% of targeted households reporting adoption of climate-smart management systems, technologies and 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	352,734
Outcome 1.2: Climate-smart policies and regulations adopted by the municipalities and protected area authorities of the landscapes.	80% of municipalities and PA authorities that issue and adopt policies and regulations supporting CC adaptation.	**Output 7:** Improved integration of climate-resilience strategies into country development plans	7.1. No. of policies introduced or adjusted to address climate change risks (by sector)	82,500
Outcome 2.1: Ecosystem restoration and adaptive agriculture solutions implemented in critical climate risk areas of	690 ha of natural/semi-natural ecosystems under integrated restoration and sustainable management. 908 ha of farmland	***Output 5:*** Vulnerable ecosystem services and natural resource assets strengthened in response to climate change impacts, including	5.1. No. of natural resource assets created, maintained or improved to withstand conditions resulting from climate variability and change	

[131] More details on the alignment with AF Core Indicators can be found in Annex 7

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the landscapes.	under climate-smart regenerative agriculture. Effectiveness 4 (Mostly Improved)	variability.	(by type and scale)	1,643,558
Outcome 2.2. Innovative marketing strategies and value chain improvement measures adopted for key products and services in the landscapes.	80 % of supported rural enterprises reporting an increase in profit.	**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.	1,215,000
Outcome 3.1. Project practitioners enabled to assess co-benefits of climate-smart landscape interventions.	80% of project beneficiaries have adopted the self-assessment protocols and tools	**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	84,992
Outcome 3.2 Project practices and lessons learned disseminated through awareness raising and knowledge exchange at the national and international levels.	155,836 people reached by the project's communication work.	**Output 3.1.** Targeted population groups participating in adaptation and risk reduction awareness activities	3.1.1 No. of news outlets in the local press and media that have covered the topic	208,361

G. Project Budget

325. **Project costs and financing**. The project cost and financing are as follows: USD 4.3 million Adaptation Fund grant (of which USD 3,963,145 for project costs, and USD 336,855 Project Cycle Management Implementing Entity Fee); USD 499,099 in the form of beneficiaries' in-kind contribution (workforce, equipment, workspace and operational costs, etc.). The budget is inclusive of taxes (direct/indirect).

Output	Item	Total AF (USD)	In Kind contribution	Grand Total
Component 1. Capacity development and policies for resilient landscapes and livelihoods				
Outcome 1.1. Local beneficiaries empowered to adopt climate-smart nature resource management, agriculture, and marketing through capacity development				
	3 start-up workshops (one per landscape)	13,500		13,500
	2 Task force - International Specialists (C-adaptive	29,700		29,700
	regenerative agriculture + C-adaptive ecosystem			
Output 1.1.1. Set of technical guidelines and protocols	restoration) x 30 days x USD 450 + 1 day participation			
for natural resource management, sustainable	workshop x 3 landscapes			
agriculture, and green marketing produced by a team	4 Task force - National Specialists (biomass management +	46,200		46,200
of national and international experts	plant production + NRM issues + business & marketing) x			
	30 days x USD 350 + 1 day participation workshop x 3			
	landscapes			

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	Travel International Experts	6,770		6,770
Sub-total output 1.1.1		**96,170**	**0**	**96,170**
Output 1.1.2. Training of trainers program implemented, based on the guidelines and protocols produced	2 Task force - International Specialists 4 Task force - National Specialists	14,400		14,400
	ToT training and communication on climate-smart	18,200		18,200
	practices	33,750		33,750
	International experts travel	12,014		12,014
Training packages	Lumpsum 6 packages = 12000	12,000		12,000
Sub-total output 1.1.2.		**90,364**	**0**	**90,364**
Output 1.1.3. Full capacity development program implemented, targeting the direct beneficiaries in the landscapes	Information public events in the 3 landscapes	15,000		15,000
	4 Task force - National Specialists for training support 7 Junior Specialists for training support	33,600		33,600
	Training on climate-smart practices for beneficiaries	12,600		12,600
		105,000		105,000
Subtotal output 1.1.3		**166,200**	**0**	**166,200**
Outcome 1.2. Climate-smart policies and regulations adopted by the municipalities and protected area authorities of the landscapes				
Output 1.2.1. Policy recommendations for	Policy Specialist	17,500		17,500
mainstreaming the climate-smart priorities into	4 Task force - National Specialists	14,000		14,000
landscape-level plans developed and adopted	Workshops and communication materials	6,000		6,000
Policy info package	lumpsum USD 15000	15,000		15,000
Policy Info Events	Lumpsum (USD 10,000 x landscape)	30,000		30,000
Subtotal output 1.2.1		**82,500**	**0**	**82,500**
Total Cost Component 1		**435,234**	**0**	**435,234**
Component 2. nature-based solutions for environmental, social, and economic sustainability				
Outcome 2.1: ecosystem restoration and adaptive agriculture solutions implemented in the critical climate risk areas of the landscapes.				
	3 Task force - national Specialists to develop 9	135,450		135,450
	management/restoration plans			
Output 2.1.1. priority ecosystems restored and	Biomass management activities	366,500	91,624	458,124
managed in each landscape following the agreed	Procurement of 3 shredding machines	60,000		60,000
guidelines.	Freshwater restoration activities	52,000	13,000	65,000
	Pastures restoration activities	219,900	54,975	274,875
	Construction of water reservoirs	68,000	17,000	85,000
Subtotal output 2.1.1		**901,850**	**176,599**	**1,078,449**
	2 Task force - International Specialists (including missions)	37,800		37,800
	Internation experts travel	51,108		51,108
Output 2.1.2. priority smallholder farmland restored and managed in each landscape following the agreed guidelines	3 junior facilitators	40,500		40,500
	Junior facilitatos transport Grants Manager	13,500		13,500
	Grants committee	27,000		27,000
		37,800		37,800
	Grants info events	15,000		15,000
	Grants info package	15,000		15,000

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	Project grants for farmers		504,000	126,000	630,000
Subtotal Output 2.1.2			**741,708**	**126,000**	**867,708**
Outcome 2.2. Innovative marketing strategies and value chain improvement measures adopted for key products and services in the landscapes.					
Output 2.2.1. Brand marketing strategy for climate-smart commodities developed in each landscape, based on existing best practices	DMO Grants	375,000		375,000	
Subtotal Output 2.2.1		**375,000**		**0375,000**	
	Grants Manager		27,000		27,000
	2 National Experts on business and marketing		21,000		21,000
	Travel National Experts		6,000		6,000
Output 2.2.2. local value chains and agrobusiness established/improved based on climate-smart criteria					
	Grants for local bioenergy businesses		135,000	33750	168,750
	Grants for local composting units		135,000	33750	168,750
	Grants for local nurseries		111,000	27750	138,750
	Grants for climate-proof agro-businesses		405,000	101250	506,250
Subtotal Output 2.2.2			**840,000**	**196500**	**1,036,500**
Total Cost Component 2			**2,858,558**	**499,099**	**3,357,657**
Component 3. Climate-resilience assessment, knowledge management and awareness raising					
Outcome 3.1. Project practitioners enabled to assess co-benefits of climate-smart landscape interventions					
	Task Force - 2 International Specialists (included travel)		7,200		7,200
Output 3.1.1. Protocols and tools for self-assessment	Travel International Experts		9,392		9,392
of impacts and co-benefits of climate-smart	Task Force - 4 national Specialists (included travel)		11,200		11,200
interventions developed and applied by project	Travel National Experts		3,200		3,200
practitioners	Monitoring Specialist		54,000		54,000
Subtotal output 3.1.1			**84,992**	**0**	**84,992**
Outcome 3.2. Project practices and lessons learned disseminated through awareness raising and knowledge exchange at the national and international levels.					
Output 3.2.1. Awareness raising programme designed	Communication & Gender Specialist		27,000		27,000
and implemented at the landscape and the national	Communication events		50,000		50,000
levels, using media tools and social opportunities	Communication materials		30,000		30,000
Subtotal output 3.2.1			**107,000**	**0**	**107,000**
Output 3.2.2. Lessons learned and best practices disseminated	Communication & Gender Specialist Workshops		27,000		27,000
	Learning visits		50,000		50,000
			24,361		24,361
Subtotal output 3.2.2			**101,361**	**0**	**101,361**
Total Cost Component 3			**293,353**	**0**	**293,353**
Total project activity cost			**3,587,145**	**499,099**	**4,086,244**
Project Execution Cost					
	Project Coordinator		1[illegible]000		1[illegible]000
Salaries and Allowances	Financial Manager		5[illegible]		5[illegible]

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	Accounting/Finance Assistant	18,000		18,000
	Monitoring Specialist	53,200		54,000
Subtotal salaries and allowances		**258,400**	-	**259,200**
Equipment and goods (computers and peripherals, printers, photocopier, accounting software and other software licenses)		11,000		11,200
Baseline survey, Project Completion (final) survey and completion process		55,600		55,600
Final Evaluation		20,000		20,000
External Audit		36,000		36,000
Operating Costs (offices rental and utility costs, audit fees,, and other operating costs)		15,000		15,000
Total Project Execution Costs		**376,000**		**376,000**
Total Project Costs		**3,963,145**	**499,099**	**4,462,244**
Project Cycle Management Implementing Entity Fee				
Financial Management (General financial oversight, support audits and quality control, manage, monitor and track AF funding including allocating and monitoring expenditure based on agreed work plans; financial management compliance with AF requirements; financial reporting compliance with AF standards; procurement support)		67,371		67,371
Programme Support (Technical support in project implementation; methodologies, identification of experts; troubleshooting and support implementation missions as necessary; portfolio management, reporting; and policy programming and implementation support services).		158,322		158,322
Technical Support (Supervision missions and implementation support, risk management, programming; guidance in establishing performance measurement processes; technical support on methodologies, TOR validation, identification of experts, results validation, and quality assurance; troubleshooting, and support evaluation missions as necessary; support on technical issues in programme implementation).		111,162		111,162
Total Project Cycle Management Implementing Entity Fee		**336,855**		**336,855**
Amount of Financing Requested	**4,300,000**		**499,099**	**4,799,099**

H. Disbursement Schedule

	Upon signature of Agreement	One Year after Project Start a)	Year 2b)	Year 3	Total
Scheduled date	2025	2026	2027	2028	-
Project Funds	665,984	1,474,736	1,312,397	510,028	3,963,145
Implementing Entity Fees	84,214	84,214	84,214	84,213	336,855
Total	**750,198**	**1,558,950**	**1,396,611**	**594,241**	**4,300,000**

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

A. Record of endorsement on behalf of the government

Mr Nasser Yassin, *Minister of Environment,* *Ministry of Environment*	Date: *09/08/2024*

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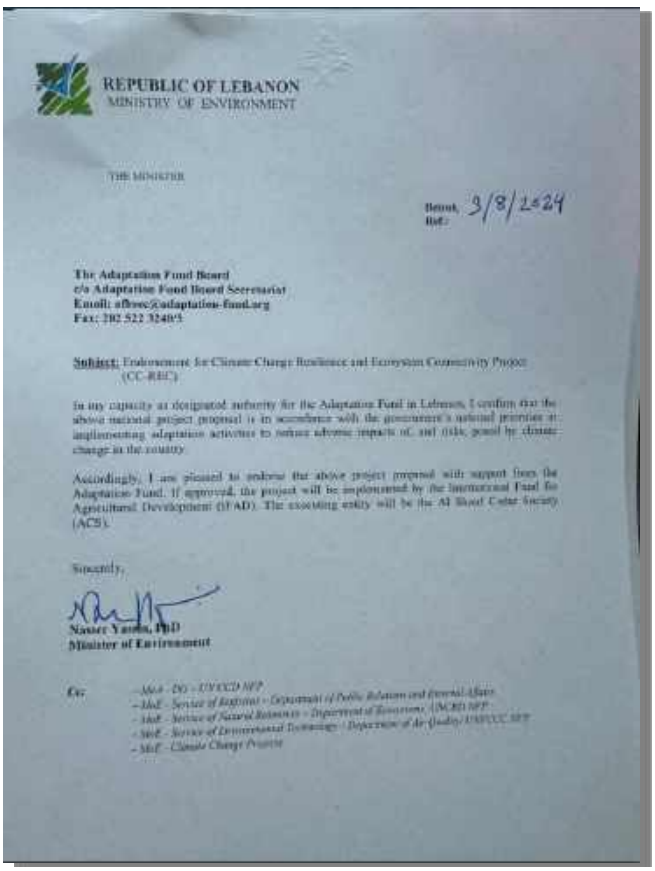

REPUBLIC OF LEBANON
MINISTRY OF ENVIRONMENT

THE MINISTER

Beirut, 3/8/2024
Ref.:

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

Subject: Endorsement for Climate Change Resilience and Ecosystem Connectivity Project (CC-REC)

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

Accordingly, I am pleased to endorse the above project proposal with support from the Adaptation Fund. If approved, the project will be implemented by the International Fund for Agricultural Development (IFAD). The executing entity will be the Al Shouf Cedar Society (ACS).

Sincerely,

Nasser Yassin, PhD
Minister of Environment

Cc:

B. Implementing Entity Certification

I certify that this proposal has been prepared in accordance with guidelines provided by the Adaptation Fund Board, and prevailing National Development and Adaptation Plans and subject to the approval by the Adaptation Fund Board, commit to implementing the project/programme in compliance with the Environmental and Social Policy and the Gender Policy of the Adaptation Fund and on the understanding that the Implementing Entity will be fully (legally and financially) responsible for the implementation of this project/programme.	
Implementing Entity coordinator: Pierre Yves Guedez Senior Climate Finance Specialist ECG Division	Email: p.guedez@ifad.org,
Mr Juan Carlos Mendoza Casadiegos, Director, Environment, Climate, Gender and Social Inclusion Division	
Date: 20 December 2024	e-mail: ecgmailbox@ifad.org
Project contact person: Mr Walid Nasr, Regional Lead Environment and Climate Specialist	
e-mail: w.nasr@ifad.org	
Mr Vrej Jijyan, Country Director for Lebanon	
e-mail: v.jijyan@ifad.org	

Deleted: email: j.rioux@ifad.org

Deleted: Implementing Entity coordinator:¶
Ms Janie Rioux¶
Senior Technical Specialist – Climate Change- AF coordinator¶
ECG division

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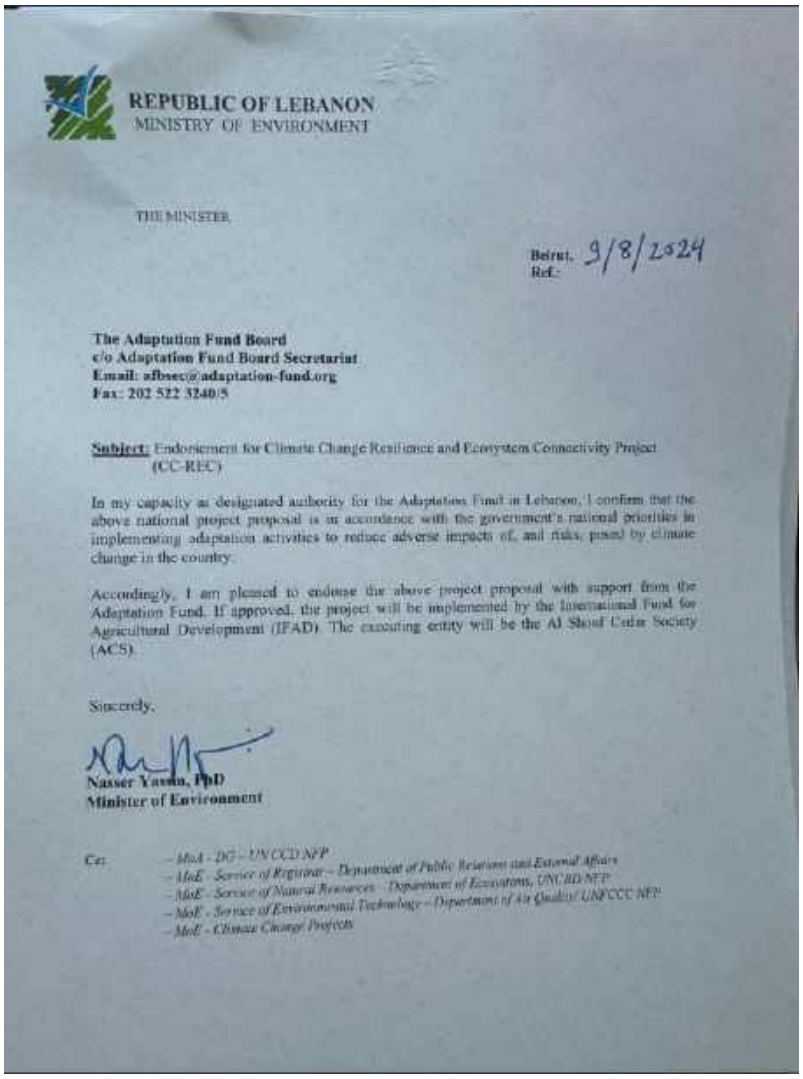
Annexes

ANNEX 1 - LETTER OF ENDORSEMENT BY THE GOVERNMENT



REPUBLIC OF LEBANON
MINISTRY OF ENVIRONMENT

THE MINISTER

Beirut, 9/8/2024
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Sincerely,

Nasser Yassin, PhD
Minister of Environment

Cc: – MoA - DG – UN CCD NFP
– MoE - Service of Registrar – Department of Public Relations and External Affairs
– MoE - Service of Natural Resources – Department of Ecosystems, UNCBD NFP
– MoE - Service of Environmental Technology – Department of Air Quality/ UNFCCC NFP
– MoE - Climate Change Projects

ANNEX 2.1 – STAKEHOLDER CONSULTATION PROCESS

1. INTRODUCTION AND SCOPE

The Project "Climate Change Resilience and Ecosystem Connectivity (CC-REC)" aims to promote the adoption of nature-based solutions to restore climate-smart landscapes and livelihoods in the Shouf-West Beqaa-Mount Hermon corridor. This project is being designed by the International Fund for Agricultural Development (IFAD) in cooperation with Al Shouf Cedar Society (ACS) and it seeks financing from the Adaptation Fund. The project objective is to "Demonstrate nature-based solutions to restore climate-smart landscapes and livelihoods in the Shouf-West Beqaa-Mount Hermon corridor". The project is structured around three components:

Component 1: Enabling environment to mainstream climate resilience into integrated land use planning and policies. The budget allocated for this component is USD 321,000.

Component 2: Impact investments in nature-based solutions to mitigate climate risks in high value ecocultural landscapes. The budget allocated for this component is USD 3,137,000.

Component 3: Knowledge management and awareness raising. The budget allocated for this component is USD 129,000.

The purpose of this document is to provide a description of the stakeholder engagement activities that were held during the design phase in the three target areas namely Shouf, Rashaya and West Beqaa in order to grasp the different perspectives of the stakeholders, understand local challenges, identify needs, and identify gaps and opportunities; knowing that the gathered data will feed into the design of the project by helping prioritize strategies whereby insights will be gained into which adaptation strategies are most likely to be feasible, culturally appropriate, and have the greatest impact on the target communities.

Three (3) multi-stakeholders consultation meetings were organized (as indicated in Table 1) with the intent to present the content of the detailed design to stakeholders in the target areas and seek feedback, while also collecting needed information to inform the design. Each consultation meeting was designed based on the Word Café methodology in addition to Key Focus group meetings.

Table 1: Region, Place, and Date of the Meetings

Region	Meeting Place	Date
Shouf	Hotel al Fundok – Maaser el Chouf	March 24th, 2024
Rashaya	Municipality of Dahr el Ahmar	March 28th, 2024
West Beqaa	Municipality of Jeb Jenine	March 30th, 2024

2. METHODOLOGY

The Word Café is a structured conversational process that facilitates dialogue and collective intelligence by engaging participants in small-group discussions around 5 key thematic areas namely (i) Biomass, (ii) Restoration of climate resilient landscapes, (iii) Business development and marketing (iv) Fresh water ecosystem restoration and water management and (v) Climate smart farming. The questions asked in the Word Café are included in Appendix A.

The meeting agenda is presented in **Table 2**, the presentation that was provided in Arabic is found in Appendix E.

Table 2: Meeting Agenda

Topic	Time
Registration of Participants	10:00-10:15
Introduction/Welcome Speech	10:15 – 10:20
Presentation of the project highlighting the main project concepts and components	10:15 – 10:30
Presentation of the methodology to be followed during the meeting namely World café	10:30 – 10:40

Topic	Time
Conducting Word Café/Focus group meetings	10:40 – 13:00
Summary of the main findings of each thematic group	13:00 – 13:15
Lunch break	13:15-14:15

On a general note, the meeting in the Shouf was attended by 50 persons (amongst which 19 women), in Rashaya by 37 (amongst which 10 women) and in West Bekaa by 24 (amongst which 9 women). The participants included representatives of various stakeholders including municipalities, research centres, local NGO's, women led NGO's, farmers, beekeepers, climate smart farming, scouts etc. The full list of participants is found in Appendix C.
All participants were eager to learn about the upcoming project that will benefit their region. They consider that involving local communities in the restoration process is vital since their knowledge of the area's history and traditions can ensure the respect of project activities while achieving ecological goals.
Since most of the participants agreed that restoration projects lead to improved livelihoods, they are all willing to support and provide in-kind contribution in terms of planting, maintenance, and sustainable resource management. Furthermore, all participants expressed their willingness to provide an in-kind cost sharing that would include the time they dedicate for carrying the works. Some participants stated that they would be ready to share their technical experience with others and provide insights on their business models in support to start ups or existing businesses.

3. SUMMARY OF DISCUSSIONS

3.1 Word Cafe

The following tables provide a summary of the discussions that took place during the word cafes.

Table 3: Summary of Workshops' Discussions in the Shouf (SL), West Beqaa (WBL) and Rashaya (RL) landscapes

Topic: Biomass				
Baseline Situation	**Participants' Recommendation**	**SL**	**WBL**	**RL**
- Reliance on several energy sources at HH and Municipal level for energy (generator, solar, public electric network), heating/cooking (biomass, diesel, gas), with installation problems (municipal solar) and/or connection (public network). - Some participants willingness to shift to new sources but facing investment, awareness and knowledge problems.	- Participants asked for support in investing in clean energy (solar, biomass), possibly at municipal/public building level (although more challenging than at HH level) - Participants encourage biomass waste management for bioenergy production on a large scale through entrusted production enterprise, incentives to HH for waste segregation, biomass harvesting/processing equipment, and awareness campaigns. - Participants recommend/are willing to participate in project activities on biomass management for bioenergy as a relevant measure to help mitigate wildfires while enhancing local livelihoods to alleviate financial burdens on families (e.g. employment and income from grazing, biomass harvesting, compost and briquettes production businesses, harvesting NTFPs, ecotourism/well managed picnic areas) and raising awareness of forest values and the benefits well managed forests provide.			
	- The Union of municipalities is applying to a bioenergy factory for the production of briquettes and pellets. Participants asked for support in terms of capacity development and equipment for small briquettes manufacturers for efficient production and stoves for efficient use of briquettes.			
- Need consultation with municipalities for a more efficient use of "cash for work" and other projects' investments on employment and training (WB union of municipalities)	- Improve contents of training programmes.			
- Most participants believe that shepherds and irresponsible tourism have a negative impact on forests	- Sustainable biomass management helps overcome this problem.			
- Various knowledge/opinions on forest fires: wildfire increase caused by climate change; risk reduction thanks to forest management, grazing.	- Sustainable biomass management helps overcome this problem.			
- Fire risk decrease thanks to well-planned grazing practices (e.g. Oref oral agreement avoiding grazing in critical spring periods when plant buds are opening)	- Keep applying traditional grazing system.			
- Fire risk increased because grazing decreased (poor grazing management led municipalities to ban grazing in certain areas).	- Sustainable grazing management helps overcome this problem.			
- Lack of awareness/understanding of climate change impacts, although it is recognized the fundamental role of CC adaptation.	- Awareness, information and training are needed on the role of adaptation of sustainable management practices			
- Planted woody species increases biomass availability for bioenergy and compost, thereby enhancing climate resilience and adaptation.	- Participants recommend/willing to plant woody species such as zaarour, almond, walnut, fig, aromatic shrubs, to create multiple benefits including ecosystem restoration, crop diversification and briquettes and compost production.			
- Fertilizers maximize yield especially when crop rotation is not practiced. Some participants expressed preference for using compost (own farmers' production or purchased to the SBR composting unit). Many participants believe that large-scale production is more efficient than individual production although this leads to additional expenses and equipment needs	- Participants want to learn about composting technologies and uses to reduce waste and enhance sustainable production, food security and revenues (good example from Batloun municipality).			
- Fertilizer usage is limited due to costs. The community relies mainly on manure. Interest in compost production	- Participants want support on compost production as a more affordable fertilizer. There is available land to create a composting unit in the landscape: need for training, coaching and implementation equipment.			

(compost available in Rashaya local shops but remains challenging for farmers).				

Topic: Restoring climate-resilient landscapes				
Baseline Situation	**Participants' Recommendation**	**SL**	**WBL**	**RL**
- Limited knowledge/awareness about climate-resilient plant types and seed/seedling supply. - In the absence of proper extension, non-native species are planted causing environmental problems. - Seed supply from suitable plant species is challenging due to lack of availability and high costs.	- Participants asked for training and coaching support to know and use climate- resilient species for farming and ecosystem restoration. - Participants asked for a local seed bank and tree nurseries for seeds/seedlings of native resilient species to ensure farmers' access to the right plant reproductive material.			
- Funding for restoration projects is not available. Restoration should have a multipurpose role and avoid negative impacts on cultural sites. Key factors such as water availability, seedling survival and protection of restored sites need to be considered.	- Participants asked for awareness raising and training on landscape restoration and its multipurpose role (environmental issues, sustainable farming systems, cultural/historical features, sustainable supply of NTFPs, etc. - Participants asked for support (e.g. small grants, revolving funding as small loans with little interest, awareness, training, technical advice, multi-stakeholder landscape committee, joint SBR/MHNR/municipality governance, including municipal env. committees) to support restoration interventions such as planting native tree/aromatic shrubs, restoring farmland habitats supporting pollination and pest control, restoring diversified cropping systems, etc			
	- Participants suggest that law enforcement could greatly assist landscape restoration and the establishment of obligations for sustainable management/production practices.			
- Limited interventions on forest management and lack of follow up/monitoring results of restored forestland	- Participants proposed/willing to participate in the development of a landscape restoration plan/mapping of zones for priority interventions with obligations for municipalities to restore public land with the right climate-adapted species, rehabilitate water ponds/new ones, restore pastures, restore sustainable and diversified farmland with key species for women's processing activities, enhance ecotourism linked to restoration.			
	- Participants proposed the establishment of information centre for knowhow sharing, and the need for training programs for land users (technologies adapted to Lebanese audience) and increase the number of knowledgeable land managers (e.g. rangers, technicians) to support practitioners and follow up restoration interventions.			
- Need for concrete multipurpose activities (more action, less studies) to reduce impacts, protect the landscape and enhance potential sustainable development sectors (e.g. tourism).	- Participants asked for support to implement multipurpose activities on: (i) grazing organization and fodder crops, (ii) water courses protection, cleaning, green cover restoration activities; (iii) sustainable farming with adapted species, organic fertilizers, and smart irrigation; (iv) rural ecotourism valuing natural and cultural features, (v) solid waste sorting and recycling factories; m.			

Topic: Climate-smart farming				
Baseline Situation	**Recommendation**	**SL**	**WBL**	**RL**
- Growing trend of common/new pests & diseases are important challenge for farmers, who link it to climate change.	- Participants asked for technical advice and funding support on: biopesticides that do not harm human health, climate-adapted species and agronomic calendars, soil and water techniques to adapt production to climate change, crop diversification, traditional/new drought-resistant crops, efficient irrigation, water harvesting infrastructure, innovative processing ideas (e.g. molasses to replace sugar), marketing.			
- Crop land abandonment				
- Farmers are witnessing a decrease in quality and quantity of crops				

- Burning of fruits due to extreme summer hot. - Changes in climate affects production calendars and crop species suitability - Increased water shortage (springs dried out) leading farmers to convert rainfed into irrigated crops	- Participants propose the creation of an agriculture service centre and a laboratory to conduct soil, water, and other relevant tests. - Participants asked for support on innovation to convert surplus waste into opportunity (transformed new products like sauces, chips, etc.), align with circular economy principles. - Participants recommend the establishment of laws, regulations, enforcement mechanisms to obligate the use of sustainable farming practices and prevent land abandonment. - Participants recommend enhancing the role of cooperatives with a focus on women			
- Lack of extension support on suitable crop types and management practices (some farmers pay for expertise). New production systems (e.g. oregano production) are failing due to weak technical guidance.	- Participants asked for training previous to technology adoption, experts' visits on regular basis for hands-on training and coaching, peer-to-peer learning, as well as exchange visits for sharing best practices. - Participants recommend the establishment of specialized centres for machinery renting, expertise, inputs, handbooks with unified solutions, etc., and support for research centres (e.g. LARI) to conduct tests and provide meteo data for farmers.			
- Farmers are embracing eco-friendly strategies and adopting sustainable practices, and new crops requiring less chemicals.	- Participants asked to expand awareness raising, knowhow sharing (e.g. WhatsApp, social media) and training based on existing and new successful pilots. - Promote organic farming for young farmers. - Plan for collaboration mechanisms among farmers to improve access to finance, equipment and markets.			

Topic: Business development & marketing				
Baseline Situation	**Recommendation**	**SL**	**WBL**	**RL**
- Most agro-food processing is carried out by women.	- Need to create local markets' concept (like farmers' market) that would allow the producers to sell their products whilst reducing the cost of transportation (i.e to Beirut). Farmer's market would also be added to the agriculture tourism map. Linkage could be made between different villages in order to have the farmer's market organized every week in a different village which would also shed the light and bring attention to this village. - Importance to work on developing and promoting the concept of Community Supported Agriculture. - Overall need for extension services. Cooperatives (and NGOs) could play an important role in providing support to the farmers through: (i) reaching out to the farmers to have them in their network which would allow the cooperatives fixing prices which would be fair to the producers/farmers thus making them less vulnerable to the pressure exerted by the "middlemen"; (ii) provision of advice on international and national consumer's trends (indeed, these are continuously changing and have an impact on the types of crops/species as well as processing types); (ii) provision of technical advice on which crops/species to use for which type of products (example of the apple was provided whereby worldwide different types of apples are used for different end products (eating, apple cider vinegar, compote, etc). In Lebanon we do not do this differentiation and we use all types of apple species for all types of end products because there is lack of knowledge about what is used for what); (iii) strengthening cooperatives to support farmers in picking up crops, this is related to the lease of equipment which is cheaper when it's done through a cooperative rather than a private owner. - Need for an "Awareness and Consultation Center" that will give advice to the farmers on what to plant (for example what crops need less water), when to use pesticides and what kind of pesticides and their compatibility as well as information about any novelty or new technique. A model could be developed that would have data such as climatic data, wind, possibility of rain etc., based on which a message would be sent to farmers part of the network on what farming practice to implement or not. The message could be sent via WhatsApp and/or could be posted on the municipality website (ACS started providing farmers with this kind of support). - Provide training to women cooperatives and associations in order to develop sustainable business plans, diversify their products, be in line with market tendencies (such as utilization of less amount of sugar), increasing shelf life of products, less utilization of food preservatives and other. Use modern technology i(e.g. short explanatory videos or reels adapted to the Lebanese culture could be a good tool to deliver the messages).			
- Some industries especially related to agro-food processing exist along with some restaurants				
- The region relies also on wine industry which benefited from the increase in temperature over the past couple of years				
- Most production (whether fresh or processed products) goes to local market or is transported to Beirut to be sold in markets like the weekly Souq El Tayeb.				

- Main challenge is related to distance from markets, finding markets and exporting especially that the local market is weak and saturated - Lack of funding especially for individual entrepreneurship (cooperatives) initiatives. - Absence of extension services that normally should be provided by the Ministry of Agriculture. - Pesticides being used have an incidence on the bees and production of honey which is directly impacted by the pesticide's residues. This affects directly the possibility to export honey and other products to markets outside Lebanon.	- Develop agriculture-related tourism services: develop a rural/agriculture map that could be used to develop tourism. This map will show local venues, local guest houses, local farmers, local producers as well as the types of crops grown and products produced and their season. This map could be shared with tourism operators to encourage tourism to the region whereby people would come and stay in a local venue and participate to the life of a farmer either by for example milking a cow, participate in any of the agricultural practices like planting, harvesting and other. - Take into consideration the needs of persons with disabilities, these could work in the tourism sector - Develop the concept of bio-certification which would open up markets especially the international ones. In the same line, consider the issue of developing a regional label which would differentiate products coming from the Chouf area from other areas. - Provide simplified information related to international standards and regulations. Knowledge of this is the first step in opening up international markets. - Some kind of small equipment is needed like a machine to dehydrate fruits, these could be provided to cooperatives - Provide support related to improving packaging of local products. - Provide training on how to produce/process food with low amounts of fats and sugar. - Support in marketing through social media. - Support export strategies for better production and crops. - Develop local tourism by shedding the light not only on traditional landscapes but also on micro landscapes which have economical, cultural and sentimental value to local communities. - Shed the light on successful stories in the region that could be used as an example/pilot on good agriculture and industrial practices. This could be done by the local municipalities. - Provide information on new marketing trends and consumer's needs and expectations. - Provide information related to international standards (this was given in relation to exporting); the information exists at the Ministry of Economy and Trade, but it is difficult for local farmers to access it easily.			

Topic: Freshwater management				
Baseline Situation	**Recommendation**	**SL**	**WBL**	**RL**
- Lack of wastewater treatment is challenging as it leads to pollution. Treatment plants are non-functional. - Water (for drinking and for irrigation) is polluted - There is a bad local community engagement and management - Absence of rainwater collection methods. - Huge increase in underground water extraction sites.	- Need to have hill lakes, micro-dams and water flow barriers(gabions). Rehabilitate and expand ponds (micro-ponds and other water harvesting at personal level) and irrigation canals to reach more farmers. - Support small farmers by putting at their disposal water harvesting equipment, such as tanks (these could be provided to cooperatives) and roof water drainages. - Promote sustainable agriculture practices (e.g. no-till, soil mulching, crop rotation) which decreases water demand, enhance soil water storage, and reduces water evaporation. Promote rainfed agriculture as a good option to afford climate change rainfall reduction and higher evapotranspiration, as well as climate-smart efficient irrigation technologies, and hydroponics. Provide drought-resistant seeds and seedlings for better production. - Raise awareness on water shortage problems related to aquifers and springs and water overuse. - Support solar systems for underground water extraction pumps and efficient irrigation. - Promote aquifer recharge methods. - Support collective actions in water-based management activities and projects. - Promote awareness for institutions, educational centers and community entities about the importance of good water management practices. - Searching for more efficient solutions for wastewater treatment plants at individual, farm factories and collective/village levels. Proposal to buy a wastewater truck to transfer the wastewater from households and factories to treatments plants. Support private sector business projects dealing with solid waste and wastewater.			

- Pumping underground water is costly due to the energy costs. - Lack of awareness about water saving and efficient use.	- Raising awareness on the self-management of household water and usage of the water resulting from showers and washing. - Split drinkable and irrigation household water. - Provide drinkable water tests. - Encourage the use of household/factory water filters. - Consider the possibility of introducing local species of fish to ponds and hill lakes, these could be used to attract tourists and/or sold this would create job opportunities.			

3.2 Focus Group Meetings

Focus group meetings targeting specific groups namely women, shepherds and beekeepers were organized in parallel to the holding of the word café, questions covered during these specific focus group meetings are found in Appendix B.

Women Focus Groups:

Shouf: Women have come to play an active role in almost every field, they are leaders, organized, patient, visionary and multi-tasking. However, 100% equality has not yet been achieved. There is a difference between the new and old generations, and women still face pressure and bullying from men. With time, women have become more independent and self-sufficient. However, there is still a lack of trust in women's abilities, and they often have fewer opportunities than men, especially in certain positions such as municipalities and mayors. Associations have helped support women and provided job opportunities, but there is no equal opportunity between men and women, neither in jobs nor in salaries.

Topic: Women Focus Groups					
	Baseline Situation	**Participants' Recommendation**	**SL**	**WBL**	**RL**
Climate change	- Impact of random landfills, polluted rivers, and sewage on the streets. - Crop production losses (cherries, apricots, and almonds have been affected, preventing women from producing preserves). - In some cases, there was not enough sun to dry the "kishk".	- Raising awareness, reducing waste, and rationalizing and reusing water.			
	- Impact on fruit and vegetable seasons delay and pest occurrence (e.g. fig, raisin, mulberry seasons). - Introduction of new crops poorly responding to climate changes (e.g. lemon, pines, olives). - Lack of snowfall. - Pollution and waste problems	-			
	- Climate change has impacted the industry, particularly with rising temperatures, reduced precipitation, and lack of snow. Women must, especially regarding agricultural cycles, food supply shortages, competition for resources, and monopolization of certain resources.	- Increase awareness and provide support to women through training workshops. (Municipality major role). - Support the establishment of women cooperatives, as a platform for women to sell their produce and enhance their economic independence. - Conduct workshops that showcase successful projects, encourage women to present their ideas for the competition, and help women to learn on project management from start to the end and ensure its sustainability. - Train women on how to obtain grants to finance their projects and teach them how to use social media platforms to promote their work on a wider scale.			

		- Establish a farmers' market (that will be open one day a week) to dispose of products and support women from all sectors			
Other issues	- Lack of awareness, culture, and moral and material incentives. - There are associations, but often they do not do their job properly.	-			
	- There is no spirit of teamwork or financial support. - Some associations and municipalities are unable to complete their support to women due to economic situation and decision-making cultural issues. - Effective agriculture cooperatives in the region, but do not support farmers with awareness, training, and equipment on suitable crops and techniques.	-			
	- Women are significantly underrepresented in the region, municipal councils and decision-making positions, indicating a lack of gender equality in the region. - Lack of awareness and knowledge about project implementation. Dependence on men that limits their ability to undertake projects. - Absence of family and local policy support can hinder their progress. - Lack of financial independence or capital. - Many women have innovative ideas but are unable to implement them due to insufficient funds, lack of experience or knowledge to apply for grants to finance their projects. - Women working in agriculture and food processing typically operate individually, without the support of women cooperatives. The sector faces challenges, including difficulty with distribution, seasonal work, and inadequate funding.	- Women play an important role in various social work and association groups (e.g. Rans Association; - Sada Al Bekaa Ass; Jeb Jenin Humanitarian Ass.; Bekaa Youth Club.			

Topic: Beekeepers Focus Groups					
Baseline Situation		**Participants' Recommendation**	**SL**	**WB L**	**R L**
Climate change	- Decline in their production (extreme weather events). - Crop production losses (cherries, apricots, and almonds have been affected, preventing women from producing preserves). - In some cases, there was not enough sun to dry the "kishk". - Beekeepers usually have complementary jobs.	- Raising awareness about the importance of bees to maintain biodiversity and crop production/pollination services. - Encourage sustainable farming practices that prevent the use of chemical pesticides. - Develop pest control techniques (e.g. biological, microbial, and other techniques to control pests without harmful impact on bees). - Strengthen and restore habitats surrounding farmland which provide a suitable environment for bees and promote their health. - Support beekeepers' cooperatives and help them technically and educationally. - Increase the "green and blue spots", by planting aromatic plants and nectar trees, in addition to increasing the establishment of agricultural ponds, which helps in the productivity of bees and prevents diseases. - Avoid introducing foreign bee varieties that may harm locally adapted ones (hybrids). - Diversify production of bee products.			
	- Lack of public support to the sector. - Absence of control on the use of chemical pesticides that are harmful to bees. - Lack of monitoring (and consumers' awareness) of adulterated bee products in the market competing with local high-quality bee products. - Hives theft.	- Provide financial support, not in-kind, and work to establish specialized centers to reduce fraud, because all products are purchased by the user as a treatment or nutritional supplement. - Plant nectar trees and honey plants and manage sustainably forests (namely oak forests) to enhance new shootings for honey dew. - Establish artificial ponds to secure bees' water needs. - Enhance cooperatives and cooperation to standardize prices. - Establish specialized centers and control mechanisms to reduce fraud.			

	- Problem with uncontrolled use of herbicides and pesticides by neighboring farmers (affecting bee health/survival, availability of nectar plants, and honey quality). - Higher frequency and intensity of droughts and floods destroy bee habitats, reducing the number of suitable locations for hives. - Erratic weather patterns in seasonal temperature and precipitation reduced flowering seasons: Erratic weather patterns can disrupt plant flowering (shorter or less predictable flowering periods weaken the remaining colony and reduce honey production).	- Increase awareness and provide support to women through training workshops. (Municipality major role). - Support the establishment of women cooperatives, as a platform for women to sell their produce and enhance their economic independence. - Conduct workshops that showcase successful projects, encourage women to present their ideas for the competition, and help women to learn on project management from start to the end and ensure its sustainability. - Planting of nectar plan species creating corridors and oases in fragmented landscapes, that help improve bee health, colony strength and honey production. - Need for educational programs for farmers and the general public about the importance of bees and the dangers of pesticides. - Need for beekeeping equipment and technologies (e.g., hive monitoring systems) that can improve beekeeping practices and colony health.			

Appendix A: World Café - questions

Thematic group I: Biomass

- What are the energy sources you use at home? Provide their utilization (cooking, heating, etc.) Do you think that they are affordable and clean (e.g. in-house pollution problems caused by diesel burning; fossil fuel greenhouse gas emissions)?
- Can you give a few examples of alternative renewable and clean energy sources that you are aware of?
- Are you willing to adopt new energy sources if they are less costly and accessible?
- How can we encourage using waste-derived biomass (e.g., municipal waste, agricultural residues, forest residues) for bioenergy production?
- Have you and your village faced problems linked to forest fires in the last years? Do you think fire risk has increased due to climate change impacts and/or forest management/abandonment problems? Do you think that biomass management and use for bioenergy may help reduce forest fire risks while providing a resource for the community?
- How can bioenergy development and biofuel production be done in a way that creates economic opportunities, employment and promotes food security?
- What benefits do you get out of the forest? Do you personally get a share of these benefits?
- If multipurpose forest management is well planned and organized, can it generate income and can it be linked to job creation and opportunity while preserving forest goods and services in the long-term? Will you consider taking part in forest management activities?
- Do you believe the project will significantly impact your agricultural/economic livelihood? Are you concerned about the impact of climate change on the environment, production systems and livelihoods?

Compost:

- Why do you use fertilizers? (e.g., maximizing yield, improving soil fertility and quality, improve crop quality by replacing synthetic agrochemicals polluting soil and water with compost and manure, optimizing cost, etc)
- Do you use organic (e.g. crop residues, soil mulching, manure, compost, etc.), or synthetic products to amend or add soil nutrients?
- Can you produce natural fertilizers (compost and manure) at your farm, do you have any agreement with neighboring forest users, farmers and shepherds, or do you have access to compost through local compost production factories?
- Are you interested in learning more about new technologies for organic fertilizer production and application to sustain healthy production, ecosystem services, food security and revenues?

Thematic group II: Restoration of climate-resilient landscapes

- In your own words, what characterizes climate-resilient landscapes, and what does "restoration of climate-resilient landscapes" mean to you?
- What are the most important climate-risk reduction, ecological, social and economic benefits you expect from restoring your landscape? (e.g., regaining healthy ecosystems with higher carbon sequestration and avoidance of greenhouse gas (GHG) emissions; enhancing the capacity of natural ecosystems to recover after disturbances such as forest fire and forest dieback events; regaining a mosaic-like landscape pattern of land use types and land use interface that help reduce the impact of climate-risks; clean water; improved air quality; soil protection and water regulation servicing lowland uses; increased biodiversity; sustained provision of wood, pastures and non-wood products such as wild fruits, edible/medicinal herbs, honey; etc.)
- Are there any cultural or historical aspects of the landscape that should be considered during restoration? (e.g., traditional farming practices; short-distance transhumance practices; sacred forest groves or trees with social value)
- How can restoration projects balance ecological, social and economic needs?/ how do sustainable natural resource management practices (e.g. organic/biodynamic agronomic systems; rotational/resting grazing systems; sustainable harvesting of wood and non-wood forest products) help restore ecosystem services?
- Have you ever been involved in any landscape restoration projects (volunteer, work experience)? If so, can you share your experience?
- What are some of the biggest challenges you see in restoring your area? (e.g., need to integrate different land uses and users' interests; land ownership issues; production and availability of seeds and seedlings from suitable native species; effective field restoration interventions to increase water availability, seedling survival and

protection of the restored area against the impact of other uses; lack of knowhow; lack of accompanying regulations; other)
- Will you be ready to contribute to a project that benefits you, if yes what kind of contribution (describe type and amount of this contribution)

Thematic group III: Fresh water ecosystem restoration and water management

- How do you assess your access to water for household and farming purposes?
- What are your thoughts on the current water availability (in terms of quantity and quality) for irrigation purposes in your region and how much do you think climate change impacts are exacerbating water availability problems (e.g. lower precipitation and higher evapotranspiration reducing soil water storage, desiccating water courses, wells and springs, and reducing the quality of less oxygenated waters and with a higher concentration of pollutants; shorter torrential rainfall events exacerbating floods and landslides)?
- How efficient and sustainable do you believe current irrigation systems are regarding water usage and distribution?
- What challenges do farmers face regarding water access, water quality and quantity, and farming practices (e.g. irrigation versus rainfed; use of polluting synthetic agrochemicals polluting the water resources versus organic fertilizers/integrated pest management) in your area?
- What challenges and trade-offs between different economic sectors' water use and needs exist (agriculture, tourism, water bottling companies, drinking water distribution to settlements and urban areas, urban and agricultural wastewater management, livestock/wildlife water needs, firefighting water needs, etc.) and how can we strike a balance between them for future generations?
- Do you pay for irrigation water? Is irrigation water distribution organized and regulated for your/other users' needs? What role can community involvement and collaboration mechanisms play in addressing water-related challenges and governance requirements in agriculture vis-à-vis other sectors' needs?
- Are you aware of and willing to apply any innovative agronomic systems, inputs or technologies that are being used or could be implemented to enhance water quality and quantity and reduce water demand (e.g. soil water conservation and evaporation reduction through mulching and cover crops; the use of drought-resistant species and varieties; the use of organic production techniques without polluting synthetic agrochemicals; automatized irrigation water use efficiency) under both rainfed and irrigation agriculture systems?
- Are you aware of and willing to apply/benefit from freshwater restoration interventions that help prevent hydrologic problems (e.g. regulate the flow of water during floods; enhance soil water storage) and reduce water pollutants (e.g. green filters with reeds and other freshwater plants to treat runoff water effluents; bioengineering techniques with seedling planting, brush-layering and gabions for bank fixation along water courses; seddling planting)?
- Do you think there's a need for better monitoring and data collection regarding water usage in agriculture? If so, how do you propose we achieve this?
- What do you envision as the future of irrigation and water management in your region, considering factors such as population growth and climate change?
- For sustainable and efficient water use, would municipalities in areas with hydrologic and water pollution (e.g. agrochemicals and urban pollution) problems be willing to establish regulations that regulate the use of water through quotas, payment fees and governance systems (water user organizations) for different uses, encourage the use of recycled water for agriculture, and establish regulations and incentives that encourage the use of non- polluting practices?

Thematic group IV – Climate smart farming Agriculture/ Climate Smart:

- How do you see changing weather patterns affecting our crops and growing seasons?
- Do you have specific strategies to deal with expected climate changes?
- What agricultural technology or practices are you aware of and/or do you use to adapt your crops to climate change conditions? How much do you integrate these farming methods on your farm, and have you noticed any improvements in terms of productivity or resource use? Can you share the estimation of the yields in last season compared with previous years and/or expected ones?
- To what extent changing types of crop species/varieties you cultivate, and diversifying the number of crop species/varieties in your farmland would reduce exposure to climate impacts and improve HH food and economic security?
- Do you think that rainfed agriculture, with the use of suitable drought-resistant crop species and varieties and farming techniques (e.g. no/reduce till, permanent soil cover with mulching and cover crops, crop rotation) is a valid adaptation strategy for your farmland plots?
- In case you use irrigation, are you interested in applying smart irrigation technologies and organic production techniques to reduce water demand, improve water use efficiency and reduce water pollution problems?
- Do you think this project Will have an impact on adapting your agricultural production and livelihood to the combined effect of anthropogenic and climate change impacts?
- What is the best way to keep farmers/herders informed about the project and future start of construction activities?

Thematic group V: Business development and marketing Food:

- Do you think climate change will have an impact on the sustainability of business and will it affect the availability of

food resources in your region?

- Do you think climate change will have an impact on social cohesion?
- Do you believe the project will significantly impact your livelihood? Are you concerned about the impact of climate change on the environment, production systems and livelihoods?
- If impacts to livelihoods are expected to occur, what would be the best way to support you during the project?
- Will you be ready to contribute to a project that benefits you, if yes what kind of contribution (describe type and amount of this contribution)
- Does your organization/enterprise have operational mechanisms and regulations (e.g. gender, social, environmental health, safety, quality principles and standards, etc.).
- What is the added value you think being organized and member of cooperative/association/enterprise should provide to members (e.g.; the sharing of production, processing and marketing equipment and inputs; the sharing of transportation and market selling points; marketing advise; higher bargaining power; other)? What is your experience, and how do you think problems could be overcome?
- What regulatory requirements or certification schemes are applied to the product (if any)?
- What are the main markets for your products (by volume or percentage), and what are the opportunities and/or limitations to access these markets?
- Can your cooperative/enterprise easily access finance, inputs, technology, technical/advisory services?
- In the last years have your organization faced additional problems linked to climate shocks? If so, to what extent would climate-proof technologies (e.g. solar driers; cold storage rooms; perishable product processing and diversification) help reduce exposure to climate impacts and improve economic security and marketing opportunities?
- Do you know potential ways to differentiate or improve the value of your products (e.g. introduce new high quality/certified products, improve quality, safety, packaging, marketing, etc.)?

Appendix B – Focus Group Meeting questions

Entity	Specific topics to be discussed
Shepherds	• Is farming/herding animals the main or only source of income? If not, what other jobs or income generating activities do you engage in? • List the top three palatable plants used by the animals in the rangeland for each type of livestock (goats, sheep), prioritize them by their current availability and importance. • What challenges do you encounter in various aspects of your livestock-raising, production, processing and marketing activities? What are the major needs? • If seasonal access to grazing ground, sufficient water and fodder is restricted, how would you ensure your animals receive the necessary feed and water? • In the past 2 years the climate patterns of rain/snow and summer heat were different, did these affect your production activities (changes in seasonal grazing locations and the need to purchase forage due to less availability of fodder and water?) • What alternative measures do you know (EXAMPLES TO BE PROVIDED: new livestock breeds better adapted to climate shocks; planting trees to provide shelter and fodder to your animals during summer hot; rotational-resting grazing to reduce pressure and enhance the recovery of the grazed grasslands; collaboration agreements with neighbouring farmers to exchange livestock manure for fodder; construction of new drinking troughs) and would you take for coping with your climate-related production/marketing problems? • Are there any collaboration mechanisms and/or conflicts between different herders and/or between farmers/herders within the project area? • Do you think that collaborative arrangements with other producers and market-related actors, and innovative measures and assets to enhance quality, diversify your products and reduce their perishability, will help increase their market value and long-term market security? • Do you get any support (financial, training or other) to produce/store/market/sell your products? What kind of support you think is needed to expand your activity?
Beekeepers	• Is beekeeping a complementary activity to other production activates or your main business? • Describe your beekeeping production/processing/marketing activity (e.g. LU/LC types where you put your beehives; nomadic/sedentary; type of bee products; marketing strategy; other). • List the 3 main plant species as food source for your bees. • What measures can be taken to ensure the continuous presence of key food for bees (eg maintaining farmland habitat in/around crops, management of oak tree pruning to enhance new shootings, etc) • What are the main problems linked to land uses (e.g. use of pesticides/herbicides) and climate change affecting your bees? • How can beekeeping practices be integrated into sustainable farmland and forestry practices to enhance resilience and adaptation to climate changes, such as drought or temperature fluctuations? What are the precautionary measures to protect bees during periods of extreme weather such as heat waves or extreme cold? • How can the management of water, agriculture and forest resources and associated flowering plants and tress species nectar in rural areas be improved to support bees? • Do you think that collaborative arrangements with other producers and market-related actors, and that innovative measures and assets to enhance quality, diversify your products and reduce their perishability, will help increase their market value and long-term market security? • Do you get any support (financial, training or other) to produce/store/market/sell your products? What kind of support you think is needed to expand your activity?
Farmers	• What type of crop species and varieties and livestock do you currently cultivate and raise on your farmland plots? • What agronomic practices do you apply: ☐ irrigation versus rainfed; ☐ deep ploughing versus no/reduce till;

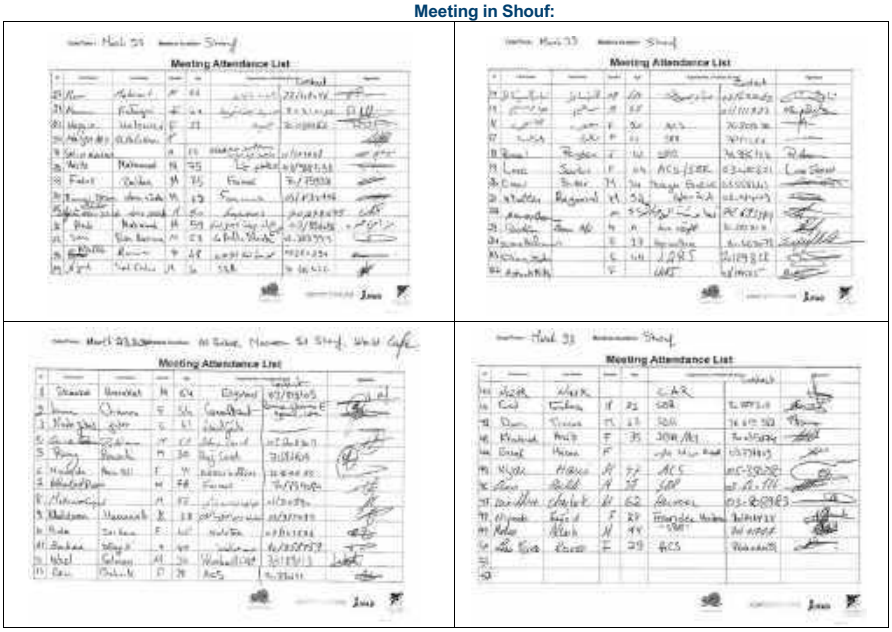
Entity	Specific topics to be discussed
	☐ organic versus intensive production with synthetic agrochemicals; ☐ crop rotation versus mono-crops; ☐ denuded soil in between crops versus permanent soil cover through mulching and cover plants; ☐ use of organic manure versus synthetic agrochemicals; ☐ use of synthetic pesticides versus integrated pest management, such as use of pheromones to disrupt pest mating, or mechanical control, such as trapping or weeding, crop rotation with pest-resistant varieties, and planting pest-free rootstock) • How do last years' changes in climate factors such as the higher frequency and intensity of extreme weather events (e.g. very hot temperatures during summer, frost, hail, reduced rainfall more concentrated in heavy events, drying of springs and wells, earlier/new pests & diseases, etc.) impact your farm productivity and profitability? • Are there any specific issues related to land tenure, water availability, equipment and input access, training and extension support, that negatively or positively affect your ability to make your own decisions and farm effectively? • What support, if any, do you currently receive from government agencies, extension services, NGOs, or other organizations, and to what extent it addresses your needs/priorities to improve your farming practices? • How do you access to and manage natural resources such as soil, water, and biodiversity on your farm, and what measures do you take individually or as part of a group of users to avoid resource depletion (e.g. water shortage, soil fertility loss) and pollution (e.g. soil and water pollution due to synthetic agrochemicals; poisoning and death of pollinators, pest-control fauna and soil biota) and promote environmental sustainability and the long- term availability of natural resources? • Are you aware of, and have the opportunity to integrate climate-smart practices, agroecological principles, or sustainable land management techniques into your farming systems? • Do you think that collaborative arrangements with other producers (e.g. producer organizations, cooperatives) and market-related actors, and that innovative measures and assets to enhance quality, diversify your products and reduce their perishability, will help increase their market value and long-term market security? In case you are part of an organization of producers or a cooperative, please explain if they help you improve your production and access to markets, indicating their strengths and weaknesses and needs for improvement. **Pests and diseases** • How do you envision the project contributing to improving your farm's productivity, climate- resilience, and sustainability as well as improving the overall well-being of your household? • How do you identify the signs and symptoms of pest or disease infestation in your crops? • How do you deal with those types of pests and diseases? • Are there any preventive measures you take? If yes, do you biologically and naturally control pests and diseases? How? • Do you receive information about pros and contra of different pest & diseases control options? • In case you use synthetic agrochemicals, do you understand/read the dosage and protection recommendations and what do you do with the containers after using them? • How would you consider improving your pest management practices in cost-effectiveness terms and impact reduction terms (human health, environmental protection with the avoidance of water and soil pollution, negative effects on pollinators and other beneficial biota, crop protection, etc.)? **Fertilization:** • Do you produce and/or use organic (e.g. crop residues, soil mulching, manure, compost, etc.), or synthetic products to amend or add soil nutrients?

Entity	Specific topics to be discussed
	• Did you change fertilization techniques in the last cropping seasons, and, if so, what did you change and reason why? • To what extent the practice used was effective in maintaining/enhancing production and preserving/enhancing soil fertility? • How important would improving soil fertilization practice be to sustain production, food security and revenues? • What constraints do you face to afford the necessary fertilizers/amendments, and how they could be overcome?
Local forest users (such as LMT, local factories)	• Who are the primary users of the forest? (e.g., local communities, tourists, researchers) • What are the main activities you engage in and benefits do you derive from the forest? (e.g., recreation, gathering forest products, cultural practices) • What are your main concerns or challenges related to the conservation and management of the forest and the services they provide (e.g., water regulation, climate regulation, biodiversity conservation, provision of wood and other resources, birds and insects providing pest-control, forest plants attracting pollinators needed for your crops)? • Are there specific threats or pressures on the forest that you think climate change is exacerbating and are of particular concern to you? (e.g. loss of vitality and mortality of trees that are more likely to become fodder for fires; over-exploitation, illegal felling and degradation of forest resources with less regulation of soil water, loss of tree regeneration and species useful forestry; other)? • Are you concerned these threats would affect your livelihood or that of the inhabitants? If yes describe how and what kind of support you would like to get to face them • Do you have traditional knowledge or practices related to the sustainable management, harvesting and marketing of forest resources, that you think help adapt to climate change and would like to share or see incorporated into conservation programs? • Do you think that collaborative arrangements with other producers (e.g. forest users, farmers, and/or shepherds) and market-related actors, and that innovative measures and assets to enhance quality, diversify your products and reduce their perishability, will help increase their market value and long-term market security?
Municipalities	• Are there different types of ethnic groups in the village? • Please indicate which livelihood strategies and economic activities exist in the village, and the approximate percentage of households involved in each type of activity (agriculture, animal rearing, herding, hunting, agro-business, tourism, other type of businesses, wild plant collection, beekeeping, etc. • Can you say that the impact of climate change started being felt in the village? If yes, describe how • Did you have to intervene in solving problems related directly or indirectly to the combined effect of anthropogenic and climate change impacts that cause reduction in extension and quality, degradation and loss of natural resources? If yes describe what, why and how • Do you have regulation measures about solid and water waste, house/infrastructure construction in rural/natural areas, the use of agrochemicals or other pollutants, underground/surface water abstraction and use, hunting, other? If so, explain which ones, problems to be respected and enforcement measures. • What measures and/or incentives does the municipality have to improve the livelihoods of the vulnerable population (e.g. unemployed youth and adults, women, migrants returning to the municipality, pensioners, refugees) • In your opinion what kind of production and business development activities linked to the sustainable use of natural resources can be undertaken to improve the socio-economic conditions of the inhabitants, notably that of vulnerable people?
Women	• What are the main roles, tasks and responsibilities of men and women in the community? • Do men and women have equal tenure rights, access to resources (e.g. land, water, production equipment and inputs), education, extension, participation and decision rights in producer organizations, cooperatives or agro-forestry and tourism companies, and financial services?

Entity	Specific topics to be discussed
	• In general, are local employment opportunities equal and open to women and men? Give reasons for your answer • Have you observed changes in weather patterns and climate variability in your community over recent years? If yes describe these changes. • How do climate-related stressors, such as crop failures, water scarcity, or natural disasters, impact household responsibilities and caregiving roles within your family? • To what extent are women included in community-level decision-making processes related to climate change adaptation and resilience-building initiatives? • What support, resources, or interventions do you believe would be most beneficial in addressing the gender-specific impacts of climate change in our community? • How can local authorities, organizations, and stakeholders better support women's resilience-building efforts and empower women to actively participate in climate action initiatives? • Are you aware of any civil society organisations or NGOs active in the region that specifically support women? What kind of support do they provide? • Are you or anyone you know member in a cooperative? If yes what is the value added provided by this cooperative (e.g sharing of equipment, opening marketing opportunities, enhancing capacity, etc)

Appendix C - Lists of Participants

Meeting in Shouf:


Meeting Attendance List

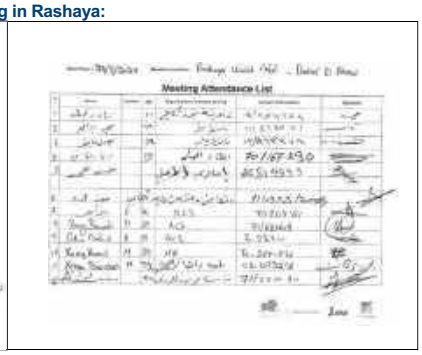
Meeting Attendance List

Meeting Attendance List

Meeting Attendance List

Meeting in Rashaya:


Meeting Attendance List


Meeting Attendance List

Meeting Attendance List

Meeting in West-Beqaa:

Meeting Attendance List

Meeting Attendance List

Appendix D: Workshop Pictures

Meetings in Shouf






Meetings in Rashaya

Meetings in West Beqaa

ANNEX 2.2 – SOCIO-ECONOMIC PROFILE

Socio-economic profile in the Shouf

1. Demographics

The labour force and household living conditions survey 2018-2019 in the Shouf (CAS, 2020) is a part of a series of reports launched by CAS, covering the twenty-six districts of Lebanon. The Shouf survey revealed that the district accommodated approximately 5.7% of Lebanon's population, totaling around 277,000 residents. 50.9 per cent of the residents were females and 49.1 per cent males.Nearly half of Shouf's residents fell within the 25–64 age group (47.8 per cent). The younger residents (0–24 years) represented less than a half of the total (41.4 per cent), while the older residents (65+ years old) represented 10.8 per cent.

2. Household survey

The Survey results showed that males predominated as heads of household. It was estimated that 83.4 per cent of households were headed by a man compared to 81.5 per cent nationally, while 16.6 per cent of households were headed by a woman relatively to 18.5 per cent in Lebanon.

The majority of primary residences in the Shouf were apartments (88.6%), while only a small percentage were independent houses or villas (10.6%). It is notable that the percentage of apartments at the district level slightly exceeded the one at the national level (85.5%)

3. Poverty rate

The socio-economic downturn coupled with the COVID-19 pandemic and Beirut blast have all contributed to a significant rate of extreme poverty. Years of rising public debt, high fiscal deficit, depreciation of the Lebanese pound, increased unemployment, business closures, inflation, limited access to foreign exchange and imports, and decreased foreign remittances, all contributed to this severe crisis, which has increased the poverty rate to 82% in 2021, up from 45% in 2019, 30% in 2018, and 27.4% in 2011-2012.

As for the Shouf district, a 2017 UNDP study identified that 23% of the district's population fell below the poverty line ($4 per day).

4. Employment

Out of the estimated 206,400 individuals aged 15 and above residing in primary homes in the Shouf during 2018-19, around 97,100 were actively engaged in the workforce, including those who were employed (85,000) or unemployed (12,000). The remaining 109,400 individuals were not part of the workforce.

When comparing unemployment rates, it is evident that rates in the Shouf and Lebanon were higher among youth compared to adults. In the Shouf, the unemployment rate was 9.4% for adults and 26.5% for youth, while in Lebanon, these rates were 8.6% and 23.3% respectively. This indicates a 17.1 percentage point gap between youth and adult unemployment in the Shouf, and a 14.7 percentage point gap in Lebanon as a whole. In terms of employment distribution, the services sector served as the primary source of employment for both genders in the Shouf and Lebanon, constituting 91.4% and 68.8% of the workforce for women, and 91.7% and 68.8% for men, respectively. At the district level, women held a 22.6 percentage point lead over men in employment within this sector. Notably, a higher percentage of men were engaged in industry compared to women, with 27.6% of employed men and 5.8% of employed women in the Shouf, and 26.6% of men and 6.7% of women in Lebanon. Agriculture stood out as the least common sector for employment at both the national and district levels.

5. Migration

Rural-to-Urban migration is not a recent occurrence in Lebanon, as it corresponds to the onset of modernization and urbanization process in Lebanon. In fact, the country is highly centralized, which triggers such a population movement towards the capital city of Beirut and its suburbs. Following the war, the Shouf region's closeness to the capital has encouraged numerous factories to relocate, particularly to Haret Al-Naameh, even onto lands not originally designated as industrial zones but later acknowledged for their industrial nature. This migration occurred without corresponding national strategies or adequate resources allocated by municipalities to address the challenges posed by these industrialized areas. Similarly, escalating

property prices in Beirut prompted waves of less affluent residents to move to the Iqlim el Shouf region, drawn by its proximity to the city and the real estate developments of the early nineties and later periods.

6. Access to basic services

The majority of households in the Shouf can easily reach at least one grocery store (92%), a bakery (79%), and public transportation (78%) within a 10-minute walk from their homes. However, access to other essential services is significantly lower compared to the national level. For example, 54 per cent of all dwellings lived within reach of a pharmacy compared to a national percentage of 69 per cent.
Bank branches and hospitals were the least prevalent in the Shouf with only 9% and 3% respectively. This is significantly lower than the national averages, with bank branches being 26 percentage points less widespread and hospitals being approximately six times less prevalent (19% in Lebanon).

7. Education

The Gross Enrolment Ratio (GER) and Net Enrolment Rate (NER) both decreased with level. In the Shouf, the GER at the elementary level was 97.7 per cent while it was 78.4 per cent at the secondary level. Similarly, the NER at the elementary level was 88.1 per cent but decreased to 58.1 per cent at the secondary level. Notably, the net enrolment rate was at all levels slightly higher in Chouf than the national level.

The "primary and below" level (31 per cent) was the highest educational attainment, with a slightly higher proportion for males than females (33.4 per cent and 28.8 per cent respectively). Although the illiterate residents aged 3 years and above were twice as high among females (8.7 per cent) as among males (4.4 per cent) at the national level, gender discrepancies were more observed at the caza level, where the proportion of illiterate women (9.8 per cent) was three times as high as that of men (3.3 per cent). This result may be explained by the fact that the proportion of elderly women aged 65+ years is greater than that of men. Furthermore, the survey results show that the illiteracy rate among the elderly is greater.

8. Land ownership

Land ownership in Lebanon is divided into three main categories: private, public, and Waqf. Private land can be owned individually or collectively. Public land can be classified as either state public property, which includes natural public assets like roads and coastlines, or state private property, which comprises developed or undeveloped land owned by government ministries or municipal authorities. Waqf refers to religious endowment land, which is land entrusted to a religious organization for specific purposes, such as schools or charitable endeavours. About 10% of the land in some regions has been acquired by private developers, while the Maronite Waqf owns 8%, primarily in agricultural areas.

9. Nature-based activities

In the Shouf district, fruit tree cultivation, particularly olive trees, is prevalent. Olive trees constitute about 50% of the cultivated area. However, most olive cultivations are highly fragmented, with more than 55% of olive growers being small-scale farmers with orchards of 0.5 hectares or less. Other fruit trees grown in the region include apple, peach, cherry, and grape trees, covering about 38% of the area. Vegetables account for 12% of crop production in the region. Major vegetable crops include Jabali tomatoes, broad beans, cauliflower, and cabbage. Due to the region's terraced mountainous topography, field crops are largely absent. Honey production is also significant, specifically in the Shouf Biosphere Reserve. There are more than 3,000 beehives registered in the villages surrounding the reserve. These produce a considerable amount of honey (approximately 5 kg more than similar beehives in other regions).
As for livestock, there are several small scattered cattle farms, most notably Holstein type. Awassi Sheep are present in smaller numbers, and Jabali and Shami goats constitute the largest number of animals raised. Additionally, there is a big number of chicken farms in the area, and many households raise Baladi chicken in their gardens or backyards.According to a 2015 Shouf Biosphere Reserve report, the reserve generates an average of $19 million annually in revenue from a range of activities, from ecological and food production to ecotourism. Tourism alone generates $700,000 annually in and around the reserve, while biomass charcoal production generates up to $1 million annually, honey production generates $450,000, and hydroelectric power generates $1.3 million. Water bottling generates up to $3.3 million, not counting grid water provision, which generates up to $12.2 million in revenue. The district has over 64,000 hectares of permanent agricultural land, 51 percent of which is dedicated to olive-tree plantations, although the mountains are draped in vineyards, there are only two operating wineries in the Shouf.

10. Vulnerable groups

Vulnerable groups include a range of individuals facing various challenges. Among them are those with specific needs, including 38.3% of households with at least one person with a chronic illness, 3.7% with a serious medical condition, 33.8% with a temporary illness, 9.9% with a disability, and 4.8% needing assistance in daily activities. Individuals aged 0-14 and above 65 in the population of the Shouf total 100,300. Additionally, 33.9% of the population is unemployed. Households deprived of basic resources essential to meet their fundamental survival and protection needs represent 48,392 individuals of the Lebanese population in the Shouf in 2016.

11. Eco/agro enterprises

Many eco-agro enterprises are present in the region and showcase activities related to beekeeping, farming, bread making, fruit picking, grazing, cycling, stargazing, hiking, and bird watching, etc. Artisan workshops offer the chance to learn traditional crafts like pottery and weaving, wine drawing and tasting.

12. Social and environmental organizations

The area is home to numerous environmental and social organizations, with some of the key ones listed below:

- Lebanese House Establishment (LHEE) for the Enviroment targets the Shouf region and seeks to encourage the participation of youth in the environmental development process in Lebanon. founded and run by social activists who work closely with various social groups, particularly youth, school students, and children. The organization's primary focus is on promoting environmental awareness at local, regional, and international levels.
- The Agro-Humanitarian Centers of the Order of Malta in Deir el Qamar are dedicated to assisting small-scale farmers and promoting food security in rural areas, especially during challenging times. This organization focuses on both social and ecological objectives, supporting communities while also engaging in sustainable agricultural practices.
- The Association for the Support and Enhancement of Women's Role in Sibline aims to defend women's social, family, scientific, occupational, and legal rights. They reject all forms of violence against women and children, ensuring their health and financial well-being. The association encourages women's empowerment and capacity-building for self-reliance and public participation.
- Farah Social Association (FSF) helps improving the lives of youth, woman and people with diseablities.

13. Municipalities and municipal unions

Most villages in the area have municipalities, often long existing ones that are largely organized under municipal unions and appear to work well collectively. The role of municipalities in this area seems to be focused on controlling or managing new developments – in terms of land purchases, use and taxation – with an eye to controlling demographic changes, while maximizing return to the municipality from businesses and new residential construction. Nevertheless, several municipalities, regardless of their political affiliation, are coordinating with or supporting civil society and environmental activists. Variables specific to the region that could be contributing to a weakening of municipal action are political interference from national level actors. Another variable in mixed villages is the shared presidency of the municipality, where different sectarian groups agree on alternate presidents from different sects, thus weakening the ability of a municipality to achieve much during its six-year term.

Socio-economic profile in Rashaya

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2.1. Demographics

The labour force and household living conditions survey 2018-2019 in Rachaya (CAS, 2020) is a part of a series of reports launched by CAS, covering the twenty-six districts of Lebanon. In 2018-2019, Rachaya district had one of the smallest populations in Lebanon, with approximately 33,800 residents, making up only 0.7% of the total population. The gender distribution was almost equal, with 50.2% females and 49.8% males. Nearly half (47.3%) of the residents were in the 25–64 age group. Younger residents under 18 accounted for 28.6% of the population, while those between 18 and 24 years old made up 11.3%. The remaining 12.9% were older residents aged 65 and above.

2.2. Household profile

The Survey results showed that males predominated as heads of household in Rachaya. It was estimated that 82.4 per cent of households were headed by a man compared to 81.5 per cent nationally, while 17.6 per cent of households were headed by a woman relatively to 18.5 per cent in Lebanon. In Rachaya, 61.3% of primary residences were apartments, while 38.7% were independent houses or villas. Notably, the percentage of independent houses or villas in Rachaya was significantly higher than the national average of 12.2%.

The majority of households in Rachaya had a density of less than two individuals per room. Specifically, 47.2% had less than one individual per room, and 42.9% had between one and two individuals per room. Compared to the national level, the distribution of households was higher for both groups of density. Residences that were more crowded, with more than two persons per room, represented 9.9% of the households in Rachaya, a proportion significantly below the one observed at the national level.

2.3. Poverty rate

The Multidemensional Poverty Index (MPI) 2018 report (WB/CAS, 2020) reveals that 53.1 percent of residents in Lebanon were multidimensionally poor in 2018-2019. The MPI of each district including Rachaya is shown in the below figure.

2.4. Employment

Out of the estimated 25,800 individuals aged 15 years and above residing in primary residential dwellings in Rachaya in 2018–19, approximately 10,800 were part of the labor force, either employed (9,400) or unemployed (1,400). The remaining 15,100 individuals were not part of the labor force.

The proportion of the adult labor force (employed or unemployed) was higher than that of the youth, accounting for 44.9% in Rachaya and 51.7% at the national level. In comparison, the youth accounted for 29.8% in Rachaya and 39.2% nationally. The employment-to-population ratio in Rachaya (36.4 per cent) was lower than that of the country (43.3 per cent) with some notable gender disparities;14 per cent of women and 59.5 per cent of men were employed in Rachaya with a gender gap of 45.5 percentage-point difference. In Lebanon, the employment-to-population ratio reached 25.1 per cent for women and 63.4 per cent for men, marking a gender gap of 38.3 percentage-point difference.

In terms of employment distribution, the services sector was the largest employer for both women and men in Rachaya, accounting for 90.4% and 68.1% respectively, compared to 91.7% and 68.8% in Lebanon. Women exceeded men in this sector by 22.3 percentage points at the district level. Interestingly, 21.1% of employed men and 7.3% of employed women worked in the industry sector in Rachaya, while in Lebanon, these figures were 26.6% for men and 6.7% for women. Additionally, employment in agriculture in Rachaya was 6.4 percentage points higher for working men compared to the national level.

2.5. Acess to basic services

The majority of primary residences in Rachaya had access to at least one grocery store (82%) within a 10-minute walk from home, while hospitals (5%) and bank branches (4%) were less common. However, compared to the national level, Rachaya had significantly lower access to major services within a 10-minute walk. For example, access to pharmacies was 53 percentage points lower, private clinics were 37 percentage points lower, public transport was 25 percentage points lower, and bakeries were 30 percentage points lower. Access to bank branches was 31 percentage points lower than the national level, while access to hospitals was 14 percentage points lower. Additionally, access to elementary, intermediate, and secondary schools was also considerably lower in Rachaya compared to Lebanon.

2.6. Education

Both the Gross Enrolment Ratio (GER) and the Net Enrolment Rate (NER) decreased from the elementary to the secondary levels. In Rachaya, the GER at the elementary level was 103.2%, while it was 94.7% at the secondary level. The NER at the elementary level was 93%, but it decreased to 59.5% at the secondary level. Notably, both the GER and NER were higher at all levels in Rachaya compared to the national level.

At the "primary and below" level, which accounted for 35.8% of educational attainment, a higher proportion was observed among males (37.9%) compared to females (33.7%). While at the national level, the percentage of illiterate residents aged 3 years and above was twice as high among females (8.7%) as among males (4.4%), gender disparities were more pronounced at the caza level (13.1% for women and 6.1% for men). This difference may be attributed to the higher proportion of elderly women aged 65 years and above compared to men. Additionally, the survey results indicate a higher illiteracy rate among the elderly.

2.7. Nature-based activities and enterprises

The economy of Rachaya caza relies heavily on agriculture, with a focus on high-quality olives and olive oil, grape molasses, and honey production.There are about 47 registered industries and companies that have more than five employees in the Caza. These industries include olive oil presses, grape molasses and stone cutting factories. The grape molasses industry is a new segment in Rachaya's economy, the overall demand penetration rate for grape molasses in Lebanon is 70%, with 49% in Rachaya and 21% in the rest of Lebanon. Implementing initiatives to expand the availability of Rachaya's grape molasses products in additional retail outlets and reintroducing strong marketing campaigns to boost the popularity of grape molasses could result in an annual increase in the demand penetration rate of 9%, reaching 99% by 2020.
Rachaya is also considered a leader in beekeeping in the Beqaa Governorate, with over 3,680 beehives. The total honey yield in the caza is approximately 28,727 kg, equivalent to 537,202 dollars. In addition to honey, beekeeping also yields products such as wax, honey soaps, and honey-based medicines.

2.8. Vulnerable groups

In Rachaya, the rate of vulnerable employment was reported to be higher than the national average, with 29.9% compared to 20.1% respectively. Additionally, vulnerable employment was more common among men, with a rate of 32.7%, compared to 18.5% among women.

2.9. Social and environmental organizations

According to the SEA report for the Master Plan of the Qaraoun catchment (ELARD, 2021), there were 53 UN Agencies and local and international non-governmental organizations (NGOs) operating in the Zahle, Rachaya and West Bekaa districts as of 2015 (OCHA, 2015. Many of these organizations' projects focus on supporting income generating activities for Syrian and Lebanese Bekaa inhabitants, increasing local workforce employability, job opportunities, vocational training, life skills and internships/apprenticeships, MSE and cooperatives support and value chains, and labour-intensive projects, such as water supply, solid waste management and sewage systems in the three targeted districts (UNDP, 2018).
In terms of cooperatives, ILO reported that "there are 1,400 cooperatives across Lebanon today, the large majority in the agricultural sector, followed by housing and credit." The National Federation of Lebanese Cooperatives reports "a total of 1,201 (active) cooperatives, 799 of which are agricultural cooperatives, 195 housing and credit, while the remaining consist of beekeeping, fishing, handicrafts and consumer cooperatives, among others" (Polat, 2010). The Bekaa region has 203 cooperatives, preceded by North Lebanon and South Lebanon, which has the largest number of cooperatives (260). In the Bekaa, just as in the rest of the country, the cooperatives sector faces challenges such as lack of human capacity and financial resources, training, politicization, inappropriate approaches to the functions of a cooperative, fake cooperatives and difficulties accessing markets (Haddad, n.d.).

2.10. Municipalities and municipal unions

Rachaya is the capital of the Union of municipality of "Jabal El Sheikh" which includes 14 municipalities. The municipalities of the district often benefit from funded projects in the region; in 2022, the USAID Lebanon Diverting Waste by Encouraging Reuse and Recycling (DAWERR) Activity announced its second round of support to three new groupings of municipalities, including Rachaya Al Wadi, to improve solid waste management (SWM) services, thus diverting significant proportions away from landfills.
Another funded project by the United Nations Capital Development Fund aims to rehabilitate the Agricultural Roads in the Union of Jabal El Sheikh Municipalities-Rashaya, Bekaa (UN, 2022).

2.11. Litany River Authority (LRA)

The LRA was established under the Law dated August 14, 1954. Its main objectives are to:

- Implement the Litani River project for irrigation, drying, drinking water, and electricity, as part of Lebanon's comprehensive water management plan;
- Establish a network linking power generation plants;
- Create transformation stations and distribution lines; and
- invest in the project's technical and financial aspects.

Socio-economic profile in West Beqaa

3.1. Demographics

The labour force and household living conditions survey 2018-2019 in West Beqaa (CAS, 2020) is a part of a series of reports launched by CAS, covering the twenty-six districts of Lebanon. These surveys covered all the population of Lebanon living in

primary residential dwellings. It did not cover the population living in non-residential units, such as construction and agriculture sites, shops, stores, factories, unfinished buildings, army barracks, refugee camps and adjacent gatherings, and informal settlements. With an unprecedented complete national sample size of 50,000 households, more than 39,000 responded to the survey, providing a relatively high response rate of 79%.
In 2018–19, the caza of West Beqaa hosted 1.8 per cent of residents of Lebanon with around 86,400 residents. 51.3 per cent of the residents were females and 48.7 per cent males. In terms of age group, 44.3 per cent of the residents of West Beqaa were found in the age group 25–64 years. The younger residents of less than 18 years old represented 32.1 per cent of the total, whereas those aged between 18 and 24 years old represented 14.1 per cent. The remaining 9.4 per cent were the older residents (65+ years old).

3.2. Household profile

The Survey results showed that males predominated as heads of household. It was estimated that 82.2 per cent of households were headed by a man compared to 81.5 per cent nationally, while 17.8 per cent of households were headed by a woman relatively to 18.5 per cent in Lebanon.
The vast majority of primary residences in West Beqaa were apartments (70.4 per cent) whereas 28.9 per cent were independent houses or villas. It is worth noting that the percentage of independent houses or villas at the caza level exceeded that at the national level (12.2 per cent).

As for residence area, 57.6 per cent of the dwellings in West Beqaa were large residences of 130 m2 with
a density of less than two individuals per room. Compared to the national level, the distribution of households was slightly higher for a density between one and two individuals per room whereas it was lower for a density of less than one individual per room. As for the residences that were found to be more crowded (more than two persons per room), they represented 19.4 per cent of the households, a proportion greater than that observed at the national level.

3.3. Poverty rate

The Multidemensional Poverty Index (MPI) 2018 report (WB/CAS, 2020) reveals that 53.1 percent of residents in Lebanon were multidimensionally poor in 2018-2019. The MPI of each district including West Beqaa is shown in the below figure.

3.4. Employment

Among the estimated 63,300 individuals aged 15 years old and above living in primary residential dwellings in West Beqaa in 2018–19, about 29,700 people were in the labour force, either employed (26,000) or unemployed (3,700). The remaining 33,600 individuals were outside the labour force.

The employment-to-population ratio in West Beqaa (41.1 per cent) was lower than that of the country (43.3 per cent). There were some notable gender disparities in the employment-to-population ratio at both the district and country levels. Less than a quarter of women (22.6 per cent) and more than a half of men (61.9 per cent) were employed in West Beqaa with a gender gap of 39.3 percentage-point difference. In Lebanon, the employment-to-population ratio reached 25.1 per cent for women and 63.4 per cent for men, marking a gender gap of 38.3 percentage points.

The unemployment rate in West Beqaa (12.3 per cent) was greater than that of Lebanon (11.4 per cent). Differences at the country level were observed between women (14.3 per cent) and men (10 per cent), yet the gap was higher in West Beqaa where the unemployment rate was 15.9 per cent for women and 10.8 per cent for men. In other words, the gender gap in the unemployment rate was higher in West Beqaa (5.1 percentage points) than in Lebanon as a whole (4.3 percentage points).

Unemployment was less prevalent among adults than among youth at both the district and country levels, with a rate reaching 8.9 per cent and 24.4 per cent respectively in West Beqaa, compared to 8.6 per cent and 23.3 per cent respectively in Lebanon as a whole. The gap between the youth and the adults' unemployment rate reached 15.5 percentage points in West Bekaa and 14.7 percentage points in Lebanon as a whole. In terms of employment distribution, the services sector was the largest employment sector for women and men, with respectively 90 per cent and 62.7 per cent in West Beqaa, compared to 91.7 per cent and 68.8 per cent in Lebanon. In this sector, women surpassed men by 27.3 percentage points at the caza level. It was particularly noticeable that 26.4 per cent of working men and 6.1 per cent of working women were employed in Industry in West Beqaa, compared to 26.6 per cent of working men and 6.7 per cent of working women in the whole of Lebanon. Employment in agriculture in West Beqaa was for both working men (10.9 per cent) and women (3.9 per cent) above the national levels.

3.5 Access to basic services

The vast majority of primary residences had access to at least one grocery store (97 per cent), a bakery (86 per cent) and public transports (78 per cent) within a 10-minute walk from home. Bank branches and hospitals (7 per cent both) were the least

common services in West Beqaa. 42 per cent lived within reach of a private clinic compared to 53 per cent at the national level, and only 7 per cent were close to a hospital, compared to 19 per cent nationally. It is also worth noting that compared to the national level, access to pharmacies was 15 percentage points less (54 per cent in West Beqaa and 69 per cent in Lebanon), whereas the access to a secondary school was 18 percentage points less (26 per cent in West Beqaa and 44 per cent in Lebanon). The widespread of bank branches was five times lower (7 per cent in West Beqaa compared to 35 per cent in Lebanon).

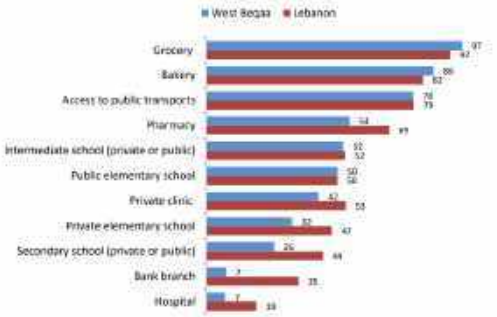

Figure 3-6 Access to Services (%) in West Beqaa and Lebanon (CAS, 2020)

3.6 Education

Both Gross Enrolment Ratio (GER) and Net Enrolment Rate (NER) decreased with level. In West Beqaa, the GER at the elementary level was 100.7 per cent while it was 88 per cent at the secondary level. The NER at the elementary level was 88.7 per cent but decreased to 61.9 cent at the secondary level. Interestingly, the gross enrolment ratio and the net enrolment rate were at all levels higher in West Beqaa than the national level, except for the gross enrolment ratio at the intermediate level.

The "primary and below" level4 (36.8 per cent) was the highest educational attainment in the caza, with a higher proportion for males than females. Although the illiterate residents aged 3 years and above were twice as high among females (8.7 per cent) as among males (4.4 per cent) at the national level, gender discrepancies were slightly more observed at the caza level (9.9 per cent for women and 4.6 per cent for men). This result may be explained by the fact that the proportion of elderly women aged 65+ years is greater than that of men. Furthermore, the survey results show that the illiteracy rate among the elderly is greater.

3.8. Nature-based activities and enterprises

According to the SEA report for the Master Plan of the Qaraoun catchment (ELARD, 2021), the permanent agriculture family workers in the district of West Beqaa count around 5,030 workers; the temporary ones are 5,970. The permanent paid labors are estimated at around 4,746 labors and the number of man-day is 186,383 distributed over 2,828 landholders. The main crops in the Bekaa Governorate are cereals, tubers, vegetables, forage, industrial crops, fruit trees, vineyards and field crops. They are cultivated for both local consumption and export. Livestock husbandry is an important sector in securing sources of income for agrarian families in the Bekaa region. Modern farms are getting importance as well, especially within combined exploitations where farmers plant fodder crops such as alfalfa, vetch, corn and barley crops for their own exploitation and have at the same exploitation cattle, goats and sheep flocks. According to the Agricultural Census of 2010, the livestock breeders of the Bekaa constitute 12% of the total number in Lebanon.The Agricultural Census showed that that the Bekaa is placed at the first rank in terms of number of heads of bovine; 18,761 animals in 913 exploitations and farms. They constitute 27% of the total number of heads at the national level.

Some 831 farmers of Bekaa practice small ruminants' husbandry. Goats and sheep flocks follow traditional animal breeding relying on natural pastures and rangelands for most vegetation season. Pastoralism and transhumance of flocks are practiced between plains and high mountainous regions. Milk and its sub-products are directly sold at local market and to local consumers. The total number of beehives in the Bekaa is estimated at 8,811. In the District of Rachya apiculture is concentrated with 3,683 beehives, followed by West Bekaa – 2,575 beehives; and Zahle – 2,553 beehives. According to the Agricultural Census (2010), the Bekaa Governorate hosts 7% of broilers producers and secures only 1,800,000 chicks per year, equivalent to 4% of the national production (Table 3-2).

Table 3-2 Geographic Distribution of Agro-Food Industries in the Beqaa Governorate (MoI, 2016)

District	Dairy Industry	Wine Industry	Beverages	Honey production	Pickles industry	Preserved, canned, frozen vegetables	Fruit and vegetables juices
Zahle	23	11	60	10	8	30	4
West Beqaa	15	7	3	5	6	7	
Rachaya	4	0	0	6	4	0	0

3.9 Vulnerable groups

There are 65 vulnerable localities in the Bekaa region, 39 are located in Bekaa governorate and 26 in Baalbek/Hermel governorates, of which six localities in Bekaa and five localities in Baalbek Hermel are classified as most vulnerable. No high vulnerability was identified in West Beqaa(OCHA, 2016).
In West Beqaa, vulnerable employment was reported to be higher than that observed at the country level (26.5 per cent and 20.1 per cent respectively). It is worth noting that vulnerable employment was markedly higher for women in West Beqaa compared to the whole of Lebanon. Moreover, it was almost as much prevalent among men (26.2 per cent) as among women (27.2 per cent).

3.10. Social and environmental organizations

According to the SEA report for the Master Plan of the Qaraoun catchment (ELARD, 2021), there were 53 UN Agencies and local and international non-governmental organizations (NGOs) operating in the Zahle, Rachaya and West Bekaa districts as of 2015 (OCHA, 2015). Many of these organizations' projects focus on supporting income generating activities for Syrian and Lebanese Bekaa inhabitants, increasing local workforce employability, job opportunities, vocational training, life skills and internships/apprenticeships, MSE and cooperatives support and value chains, and labor intensive projects, such as water supply, solid waste management and sewage systems in the three targeted districts (UNDP, 2018). The majority of these projects have been completed and have a duration of 12 months; among these projects, 4 were completed during the first half of 2019, and include 2 vocational training and apprenticeship programmes, 1 job opportunities programme and 1 life skills programme in West Bekaa (UNDP, 2018).
The Bekaa region has 203 cooperatives. In the Bekaa, just as in the rest of the country, the cooperatives sector faces challenges such as lack of human capacity and financial resources, training, politicization, inappropriate approaches to the functions of a cooperative, fake cooperatives and difficulties accessing markets (Haddad, n.d.). Although, in general, women cooperatives "face difficulties in marketing their goods" (Polat, 2010), there are examples of successful cooperatives in the country that are managed by women (UNDP, n.d.).

3.11. Municipalities and municipal unions

There is a critical disparity in the role of different municipalities in Central Bekaa. Zahle's municipality is the most capable in the area in terms of logistical and human resources, as well as service provision. In contrast, municipalities of adjacent areas suffer from a lack of resources and are considerably less capable of providing services.

ANNEX 3 - ENVIRONMENTAL AND SOCIAL MANAGEMENT PLAN

I. Executive Summary

The economic, political, and social crisis affecting Lebanon since 2019 has caused significant deterioration in the welfare of its population. In the last years, 400,000 people have fallen into poverty in the country because of rising food insecurity, high unemployment, decimated salaries due to the depreciation of the currency, stagnating household incomes, and poor access to public services. The economic crisis is weakening the country's human, natural, and physical capital, eroding its already limited capacity to adapt to climate change[132]. Climate change impacts are projected to reduce Lebanon's growth potential by up to 2 percent annually by 2040 and threaten service provision, especially in water and energy, hindering key growth sectors such as agriculture and tourism[133]. According to the Lebanon's Nationally Determined Contribution to the UNFCCC[134], building adaptive and resilience capacity against climatic shocks, especially in the water, ecosystem conservation and management, agricultural, and tourism sectors, will be critical to support Lebanon's recovery and protect the livelihoods already jeopardized by the economic drawback.

The project "Climate Change Resilience and Ecosystem Connectivity " will operate in three contiguous landscapes of central Lebanon, with a total surface of approx. 42,000 hectares, along a corridor connecting three nature reserves of outstanding ecological value: (i) the Shouf landscape Biosphere Reserve (SBR) on the Mount Lebanon section between Barouk and Niha, (ii) the Ammiq Lake Ramsar Site and linked waterways of the Litani River floodplain in the West Beqaa; and (iii) the Mount Hermon nature reserve in the Rashaya region. The whole area is a stronghold of biological diversity: SBR is home to some of the largest and best-preserved cedar and broadleaf forests of Lebanon, with more than 1,200 vascular plant species identified so far, while the region of Mount Hermon is rich in medicinal, edible, and aromatic plants, and in wild relatives of agriculture plants such as cereals and legumes, and the Ammiq wetland is considered a key freshwater sanctuary along the Eastern Mediterranean bird migration flyway.

The three target landscapes are home to approx. 156,800 inhabitants, whose main income source is wage employment, followed by temporary employment and daily labour. Households primarily engaged in agriculture are 3% in Mount Lebanon and exceeded 5% in the Beqaa region. As an average, half of the population in the landscapes suffers from a moderate or severe Household Deprivation Score (HDS), and nearly 17% of the population reported to have received social assistance. The unemployment rate is 18% among men, and 43% among women. The main crops in the Shouf-West Beqaa-Rashaya corridor are olives and other fruit tree crops in dry stone wall terrace systems, with a high percentage of large properties of vineyards, cereal, fodder, and vegetable crops in the flatland areas of the Beqaa valley. Most crops are intensively irrigated with broad use of agrochemicals causing soil and water pollution, one of the main causes of the intense pollution of the Litani River and the Qaraoun water reservoir, whose waters cannot be used for irrigation and human consumption.

The project will target rural landowners, users, and socio-economic operators in prioritized climate-risk areas, with a focus on smallholder households – farmers, shepherds and forest users and small/medium enterprises involved in the production, processing and marketing of goods and services linked to food, bioenergy, compost, plant nursery production and ecotourism, in the each of the target landscapes. The project will contribute to the design and implementation of nature-based solutions, that help restore those ecosystem services on which climate-adaptive agriculture, forestry and pastoral production systems of the landscape depend, and that have been suffering decades of unstainable management and degradation. The design of the project included a preliminary two-week field mission, where the design team met local stakeholders - women and men landowners and land users, cooperative members, producer organizations, municipality members, local entrepreneurs, researchers, NGO staff, protected area managers, and extension agents. Once the targeting had been profiled, a more meticulous participatory exercise was carried out, including consultation workshops, focus group discussions, and interviews to share, debate, and prioritize the menu of locally adapted climate-smart solutions that had been previous identified by the experts.

The objective of the project is: "**Restore climate-smart landscapes and support resilient livelihoods in the Shouf-West Beqaa-Mount Hermon corridor through the adoption of nature-based solution**s". The project is structured around three components:

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[132] In 2023, Lebanon ranked 117 out of 192 countries in terms of readiness to face climate change according to the Notre Dame Global Adaptation Initiative Country Index (https://gain.nd.edu/our-work/country-index/rankings/).
[133] World Bank Group. 2024. Lebanon Country Climate and Development Report.
[134] Lebanon's 2020 Nationally Determined Contribution Update.

1. **Capacity development and policies for resilient landscapes and livelihoods**. Under Component 1, the project will create the enabling conditions for the uptake of nature-based sulutions by conducting a training program addressing trainers, direct beneficiaries, and decision makers on ecosystem restoration, sustainable agriculture, and green marketing. The training will science-based, but with a very practical approach, delivering knowledge and lessons learned based on successful experiences within Lebanon and at the global level. This component will also aim to empower decision makers and municipal authorities so that they can design and put into practice- those climate-smart policies and regulations that will pave the way and support change.
2. **Nature-based solutions for environmental, social, and economic sustainability**. This component will absorb the bulk of investments, to support the implementation of ecosystem restoration measures and the setup of a network of climate-adapted, low-impact, biodiversity-friendly productive systems in climate risk areas. It will also lay the basis for the design and adoption and of effective and tailor-made marketing strategies, based on successful experience from neighbouring areas in Lebanon, and from international case studies. It will build on the capacity development work undertaken in Component 1 and on existing previous initiatives and structures like the cooperatives and Destination Management Organisations (DMOs) already in place by the target protected areas. This component will also help establish a network of skilled, knowledgeable, and committed land users, producer groups and business operators, especially businesswomen and unemployed youth, engaged in climate-proof green value chains.
3. **Monitoring, knowledge management and awareness raising**. This component will ensure that awareness of project themes and activities is spread through national and local channels and that the knowledge generated, and lessons learned are analysed, understood, and used by appropriate audiences, including researchers, decision- and policymakers, territorial managers, land users and the public. An important outcome will be the development of a monitoring and evaluation framework- a crucial tool for the adaptive management of the project objectives and the sustainability of the results during and beyond the project lifetime.

The project will be implemented by Al Shouf Cedar Society (ACS), the entity responsible for the management of the Shouf Biosphere Reserve and Mount Hermon Nature Reserve, in collaboration with local public and private partners. ACS will be responsible for the the day-to-day management and execution of project activities, including overall administration, fiduciary aspects, procurement, monitoring and evaluation The targeted municipalities and municipal unions, the MoA local institutions, and the local Water Establishment offices, will play a major role in steering the implementation of the activities. The Project will establish a gender-balanced Project Management Unit (PMU) in the ACS headquarters in the SBR and MHNR for execution. The Ministry of Environment of Lebanon as the Adaptation Fund Designated Authority will have overall responsibility of the project and will coordinate with all relevant ministries. The project will also establish a Project Steering Committee (PSC) chaired by the Ministry of Environment, or its designated representative, and including key staff from key project partners, whose responsibility will be approval of the annual work plans and budgets (AWPBs) as well as serving as a coordination body.

The PMU will ensure compliance with the ESM Framework and Undertake capacity building activities for Project stakeholders on E&S management capacity. A training program shall be delivered to enhance the E&S management capacity for PMU staff, implementing partners (NGOs and companies; experts), and communities and private landowners, forest users, and farmers on: (i) Identification and assessment of E&S risks; (ii) knowledge about relevant policy frameworks and E&S risk management measures/instruments;
(iii) E&S monitoring and reporting; (iv) Incident and accident reporting; (v) Application of labour management procedures, including Code of Conduct, incident reporting, SEA/SH, (vi) application of stakeholder engagement plans; (vii) Basic Occupational Health and Safety measures and Personal Protective Equipment, as well as Community health and safety issues; (viii) Grievance redress; etc.

II. ESP Screening and Categorization

The Project aims to identify and implement priority adaptation measures for 43 municipalities in the corridor zone that extends between the Shouf Biosphere Reserve, the Ammiq wetland the West Beqaa floodplain and Mount Hermon in Rashaya region, in line with the priorities set forth by the Government of Lebanon (GoL). The project complies with the relevant national legislation and the investments undertaken by the project will promote climate resilience and take into consideration the vulnerability of the target areas in terms of climate-risks - such as the higher frequency and intensity of forest fires, floods, land degradation, drought increase water shortage and extreme temperatures – as well as the negative impact on the livelihoods of rural poor. The proposed investments and capacity development support also aim to help climate vulnerable beneficiaries reduce their food, economic and energy insecurity through sustainable and diversified sources of income, goods and services, and by increasing awareness about the co-benefits that result from climate-smart landscape planning and management.

As such, the project is an environmentally positive one with no potentially adverse impacts. Following the risk assessment detailed in section IV below, the project corresponds to a **Category B** project, equivalent to a **"moderate**

risk category" under the IFAD SECAP Environmental and Social Risk and Climate Risk categories due to some minor risks for which mitigation measures have been taken and integrated as described in the ESMP below. Overall, the potential environmental and social risks posed by the project are limited and the project will make a net-positive contribution to sustainable natural resources management and climate change adaptation.

Table 1. SECAP Environmental and Social Risk - Moderate Category

Moderate	**Moderate Risk:** A project should be classified as Moderate Risk when potential adverse risks and impacts on human populations or the environment are not likely to be significant. This may be because the project is not complex or large, does not involve activities with high potential for harming people or the environment, and is located away from environmentally or socially sensitive areas. The potential risks and impacts are: – Predictable and expected to be temporary or reversible; – Low in magnitude; – Site-specific, without the likelihood of impacts beyond the project life cycle; – Low probability of serious adverse effects to human health or the environment (e.g. they do not involve the use or disposal of toxic materials, or routine safety precautions are expected to be sufficient to prevent accidents); – The project's risks and impacts can be easily mitigated in a predictable manner. Additionally, a project is classified as Moderate Risk when it finances one or more of the following activities: – Small dam or reservoir construction (between 5-9-metre high wall, and/or with a reservoir below 100,000 m³); – Construction of small-scale irrigation schemes rehabilitation/development (below 300 hectares per scheme); – New construction, rehabilitation or upgrade of rural roads (AADT below 400); and/or – Aquaculture or mariculture of less than 25 hectares on one site.

Table 2. SECAP Climate Risk Classification

Category	Climate risk
High	**High Risk:** The outcome of the project will be jeopardized by climate change, with the potential for severe impacts of significant irreversibility. Climate-related risks and impacts are likely to result in financial, environmental or social underperformance or failure. Adaptation measures are likely to be ineffective, extremely costly, socially unacceptable or may increase risk and reduce resilience. Adaptation limits may be reached or loss and damage may occur.

Category	Climate risk
Substantial	**Substantial Risk:** There is the potential for widespread impacts from climate change. Outcomes may be undermined by climate change and adaptation measures may not be readily available. Financial, environmental and social underperformance or failure cannot be excluded. However, risk management activities are likely to increase the resilience and adaptive capacity of households, infrastructure, communities and ecosystems.
Moderate	**Moderate Risk:** Impact from climate change may occur, but will be limited, transient or manageable. Financial, environmental and social underperformance or failure is unlikely. The system has the capacity to manage volatility, shocks, stressors or changing climate trends.
Low	**Low Risk:** No negative impact from climate change is expected based on the best available data. Financial, environmental and social underperformance or failure appear very unlikely.

Table 1 shows the description of the moderate E&S risk category, while Table 2 describes the four climate risk categories as defined by the SECAP.

III. Environment and Social Impact Assessment

Principle 1: Compliance with the Law

Law

The project complies with Lebanon's national technical standards, as outlined in its laws and regulations. Section II-E details the relevant National Technical Standards that apply to project's interventions. However, there is a minor risk of non-compliance to the law (especially with regards to laws related to environment, forest and land resources, livestock, agriculture, and labour) from service providers that will be contracted during implementation. Relevant mitigation measures are listed in the ESCMP below.

All bidding and tendering documents, as well as contracts signed with external contractors under the framework of the project will include an article informing about the applicable laws.

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Principle 2: Access and Equity

No further assessment of potential impacts and risks is required for compliance with access and equity since the project will not reduce or prevent communities in the targeted areas from accessing basic services. The vulnerability assessment conducted as part of the initial geographic targeting has taken into account levels of poverty and climate vulnerability, and hereby ensures that the targeted beneficiaries will be rural poor and climate vulnerable smallholders as well as the vulnerable categories of women and youth. Fifty percent of beneficiaries will be women and thirty percent youth.

The project will take several transparent steps that will help ensure that the benefits are being distributed fairly with no discrimination nor favouritisms. Primarily, project targeting has been agreed with the MoE and comprises targeting criteria based on gender and age quotas. The project will advertise broadly through the mass media (radio, social media, municipality meetings, workshops, etc.) for the implementation of an outreach/mobilization strategy. Beneficiaries will be explained, as they have been throughout the participatory and gender-balanced consultations during the design, that this is a project with a strong focus on women and youth, but that also adult men will also be eligible. The project will adopt call for applications with evaluation criteria and standards for both the grants scheme and the call for tenders for ecosystem management/restoration works, as a transparent instrument including several steps and independent selection committees to target beneficiaries of interventions and implementation partners.

Principle 3: Marginalized and Vulnerable Groups

The project has been shown not to pose any risks to the marginalized and vulnerable communities. The design team had a specialist on gender and social inclusion who conducted a poverty and gender-sensitive assessment in the targeted Municipalities. The specialist involved a team of local experts on social, ecosystem management and rural development issues collected information and undertook consultations with relevant institutions, local officials, and several marginalized and vulnerable members of the local communities.

However, the deterioration of the regional conflict has affected the country, including the target area, determining an increase in number of IDPs. This is an emerging phenomenon that cannot be comprehensively assessed for the time being, given the ongoing security conditions on the ground. On the basis of the security situation at implementation, the team will assess whether IDPs are present in the target areas and if so, conduct the needed consultations and assessments with the relevant stakeholders and local authorities and tailor the project activities accordingly, if needed.

Years of rising public debt, high fiscal deficit, depreciation of the Lebanese pound, increased unemployment, business closures, inflation, limited access to foreign exchange and imports, and decreased foreign remittances, all contributed to this severe crisis, which has increased the poverty rate to 82% in 2021, up from 45% in 2019, 30% in 2018, and 27.4% in 2011-2012[135]. The data for the target districts comes from 2017 and is therefore very outdated. The real situation of the enormous economic and political crisis in the country is that most people, especially those who depend on public salaries, have reduced their income by at least tenfold and have enormous difficulties in meeting their basic monthly needs. The paradox arises that Syrian refugees receive from UNHCR a monthly compensation much higher than the current average salary of the local population, which is producing high unrest and tensions between both populations. During the assessment, the issue of Syrian refugees was widely debated within the team and with the different institutions and target groups involved in the exercise. The involved groups agreed on the analysis that, in general, Syrian refugees currently enjoy a better economic situation than native Lebanese, because of the subsidies and grants they receive from UNHCR, and the job opportunities provided to them by several agencies, including WFP. Therefore, the consensus was that, although this category will not be excluded per se from the project, they cannot be considered a particularly vulnerable group that should be granted priority.

Poverty. In 2018-19, out of the estimated 206,400 individuals aged 15 and above residing in primary homes in the Shouf district, around 97,100 were actively engaged in the workforce, including those who were employed (85,000) or unemployed (12,000). Gender inequality in labour force participation was significant in the district and like the national level. Men had higher participation rates (69.3% in Shouf) compared to women (26.9% in Shouf), resulting in a considerable gender gap of 42.4 percentage points. The employment rate in the Shouf was 41.2%. Significant gender disparities were observed with 22.1% of women and 62.2% of men employed, resulting in a gender gap of 40.1 percentage points. In Rachaya, the total labour force participation rate was 41.7%. There was a significant gender disparity in the district. Men had higher participation rates (65.3%) compared to women (18.9%), leading to a substantial gender gap of
46.4 percentage points. The total labour force participation rate in West Beqaa was 46.9 per cent. Gender disparity was high at the district level with 69.3 percent men's participation rates and 26.9 percent women's participation, with a notable gender gap reaching 42.4 percentage points.

The project target groups will be: (i) vulnerable smallholder farmers and forest users experiencing deprivations with respect to key living standards (education, health, food, shelter and income) based on the multidimensional Household Deprivation Score (HDS) applied by the WFP for Lebanese residents in each district; (ii) commercial and economically active smallholders and small-scale processors, agro-enterprises and traders; (iii) unemployed young women and men without professional skills that prevent them from accessing job and business development opportunities; (iv) all relevant stakeholders in the target landscapes who will benefit from the climate risks interventions and the enhanced resilience of ecosystems and their services. All smallholders engaged in the targeted commodities and those living within the broader landscape will benefit from project's interventions. Rural women and youth will be specifically targeted, with at least 30 percent women and 30 percent youth.

The project's participatory and inclusive approach will enable fair and equitable access to project benefits to all participants, including marginalized and vulnerable groups, who meet the project eligibility criteria. The Project will apply eligibility criteria in the training programs and grants' scheme to crowd-in vulnerable and poor producers, as

[135] ACAPS, 2022, LebanonSocioeconomic crisis, Lebanon Socioeconomic crisis | ACAPS. Retrieved from: https://www.acaps.org/country/lebanon/crisis/socioeconomic-crisis

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well as by establishing rating systems to add value to marginalized groups (women, youth) applications. The project will help them increase their resilience by becoming more commercially and economically active, notably by creating linkages between producers, commercial and economically active local businesses, and other strategic value chain actors. As evidenced by the participatory project design process, the targeted land users and local entrepreneurs are on the front line of the climate change crisis, which impacts every aspect of their daily lives — from the money they earn from their products and services to the food they put on the table for their families. The project will support these farmers adapt to the climate change impacts that are already happening.

Gender & youth. the project has conducted a Gender Assessment as required by the AF Gender Policy and is presented in annex 4 of the project proposal. Project design has put special emphasis on addressing gender inequalities and empowering women, as it is vital to meet the challenge of reducing the vulnerability of livelihoods and ecosystems in the target landscapes to the negative impacts of climate change. This will be done in three ways: (i) recognition of gender differences in adaptation needs and capacities as part of landscape and cluster planning processes; (ii) gender-equitable participation and influence in adaptation decision-making processes; (iii) gender-equitable access to finance and other benefits resulting from investments in adaptation (e.g. support for climate adaptive businesses). In addition, special attention will be given to promoting a more equitable balance in workloads and in the sharing of economic and social benefits between women and men, for example by introducing time and labour-saving technologies. In general, at least thirty percent of the project's beneficiaries will be women, with the exception of the nine agrofood processing cooperatives, which will have 100 percent female participation. The project will put emphasis on promoting the professionalization and economic empowerment of young unemployed (e.g. by giving them priority for accessing training, and grants for strengthening their production and business skills) and enabling them to have an equal voice and influence in local institutions and organizations.

As part of the project's formulation, a Gender Assessment has been conducted, and a Gender Strategy together with a Gender Action Plan have been established (Annex 5). The Gender Action Plan includes costed activities (embedded in the project), responsibilities and indicators to ensure and monitor gender equality and women empowerment under the project.

Non-discrimination of vulnerable people applies to all vulnerable categories as mentioned above but also extends to the elderly and persons with disabilities. In all consultations and at all times, IFAD will ensure that no vulnerable people are discriminated. Should any of the beneficiaries fall into this category, efforts will be made to facilitate access to the project's services, events, and any other activities related to the project.

Principle 4: Human Rights

No further assessment of potential impacts and risks is required for compliance with human rights since the project is designed to respect and adhere to the requirements of all relevant conventions on human rights in compliance with the ESP. Among the Guiding Principles and Specific Requirements for IFAD's Social Environmental Climate Assessment Procedures (SECAP), is the principle to "*support the efforts of borrowers/recipients/ partners to respect human rights, avoiding infringement on any human rights and addressing adverse human rights risks and impacts caused by clients' business activities*". Any observed human rights violations will be reported through the project grievances procedure.

The 2022 report of OHCHR from the Special Rapporteur on extreme poverty and human rights includes the following priority recommendation: "Women's access to employment should be improved and the gender wage gap addressed."

Principle 5: Gender Equality and Women's Empowerment

No further assessment of potential impacts and risks is required for compliance with Gender Equality and Women's Empowerment. The project has conducted a Gender Assessment as required by the AF Gender Policy, which is presented in Annex 4 of the project proposal. The assessment assisted the project design in taking proactive measures to integrate gender-focused development strategies, thus addressing the minor risk of discrimination in beneficiary selection towards female beneficiaries.

Design. The IFAD's poverty targeting' and gender sensitive' design and implementation guidelines were applied during the design of the project. The design team included an expert on gender and social inclusion who conducted a poverty, targeting and gender-sensitive assessment in the targeted Municipalities. In order to overcome any potential risks related to this principle, the project has developed a proactive strategy for the participation of women in project activities. Specific gender objectives, activities, disaggregated targets and budget allocations have been established,

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and the selection criteria for the service provider includes women staff to ensure outreach to women and integrate gender aspects.

Inclusion. The project will put special emphasis on addressing gender inequalities and empowering women, as it is vital to meet the challenge of reducing the vulnerability of livelihoods and ecosystems in the target landscapes to the negative impacts of climate change. This will be done in three ways: (i) recognition of gender differences in adaptation needs and capacities as part of landscape and cluster planning processes;
(ii) gender-equitable participation and influence in adaptation decision-making processes; (iii) gender- equitable access to finance and other benefits resulting from investments in adaptation (e.g. support for climate adaptive businesses). In addition, special attention will be given to promoting a more equitable balance in workloads and in the sharing of economic and social benefits between women and men. At least, thirty percent of the project's beneficiaries will be women.

Monitoring. The project includes a M&E officer as well as a Communications & Gender Specialist. Both will ensure that the system collects gender and age disaggregated data, produces gender knowledge and monitors investments in poor and climate vulnerable regions, and that the Grievance Redress Mechanism is well-functioning and successfully addresses any issue raised. Specific attention will be given to participatory reflective monitoring of self-assessment monitoring protocols and tools. The gender perspective will be systematically mainstreamed at individual and organizational levels into PMU management from the start via quantitative and qualitative participatory monitoring and evaluation, ad hoc studies, and workshops. As per AF gender policy, during implementation the Communication & Gender Specialist will ensure project compliance with the gender policy guidelines.

Principle 6: Core Labour rights

The project will not negatively affect Core Labour Rights. However, a minor risk exists with regards to external contractors not respecting fully core labour rights.

Lebanon is an ILO member state since 1948, and has ratified 50 ILO Conventions, including 7 of the 8 fundamental conventions which address key human rights issues including: Forced labour, child labour, freedom of association, and equal opportunity and treatment at work. As such, no further action is required by the project.

IFAD has a longstanding partnership agreement with ILO dating back to 1979. The project will prevent any activity that may negatively affect Core Labour Rights. The relevant international and national labour laws guided by EU and ILO labour and standards will be followed throughout project implementation. The project will respect, promote, and realize the principles mentioned in the ILO Declaration of Fundamental Principles and Rights at Work, and ensure that they are respected and realized in good faith by the Executing Entity and other contractors. The prohibition of child labour will be part of the agreement with the beneficiaries and will be a non-negotiable provision of the agreement. IFAD is also an equal opportunities employer and as such it works to ensure that all its projects are free of discrimination in respect of employment and occupation. The project design ensures quotas for women and youth participation and transparent processes for recruitment as well as raising awareness raising about women and youth participation in decision making processes.

Child Labour. IFAD has a longstanding partnership agreement with ILO dating back to 1979 and the project will not engage child labour in any of its activities. The prohibition of child labour will be part of the agreement with the beneficiaries and will be a non-negotiable provision of the agreement. Furthermore, IFAD as part of IFAD's Rural Youth Action Plan 2019-2021 (RYAP), is one of the founding members and has an ongoing partnership with the International Partnership for Cooperation on Child Labour in Agriculture (IPCCLA). IFAD has been involved in collaboration with United Nations and non-United Nations entities to advocate against child labour in agriculture and contributed to the preparation of a policy brief entitled "Breaking the rural poverty cycle: Getting girls and boys out of work and into school". IFAD is also an equal opportunities employer and as such it works to ensure that all its projects are free of discrimination in respect of employment and occupation. The project design ensures quotas for women and youth participation and transparent processes for recruitment as well as raising awareness raising about women and youth participation in decision making processes.

Principle 7: Indigenous Peoples

As there are no indigenous groups in Lebanon, this principle is hence not applicable and does not require further assessment for ESP compliance.

Principle 8: Involuntary resettlement

No involuntary resettlement is foreseen in any circumstance during project implementation. As such, this principle is not applicable and does not require further assessment for ESP compliance.

Principle 9: Protection of Natural Habitats

The project is not expected to have any negative impact on critical natural habitats.

The project has already identified the priority land plots where the different project interventions will take place in the target landscapes (Project Document Part I, section "Project Area and Targeting Strategy"; Annex 6). The prioritized areas in the Shouf, West Beqaa and Rashaya landscapes do not include any site designated as a protected natural area.

The biodiversity assessment implemented by the EU-funded Bio-connect project in the target landscapes has assessed more than 41 habitat types, with the identification of the following high conservation value types:

Shouf Biosphere Reserve (included Ammiq wetland)		**Mount Hermon Key Biodiversity Area**	
Type	**Occurrence project area**	**Type**	**Occurrence in project area**
Lebanese [*Platanus orientalis*] and [*Alnus orientalis*] riparian forests	In/outside Project area	Endemic deciduous oak (*Quercus look*) forests	Outside project area
Pinus pinea forests	In/outside project area	Xerophile montane Rosaceae deciduous thickets of Lebanon	In/outside project area
Mount Lebanon *Cedrus libani* forests	Outside project area	Western Asian acidophilous alpine grassland	Outside Project area
Endemic deciduous oak (*Quercus look*) forests	Outside project area		
Oro-Mediterranean hedgehog heaths of Lebanon	Outside project area		
Western Asian acidophilous alpine grassland	Outside project area		
Riparian great fen-sedge [*Cladium* sp.] beds; Dry freshwater [*Phragmites* sp.] beds; Swamps and marshes dominated by soft rush or other large rushes [*Juncus* spp.]; Common galingale beds [*Cyperus* spp.] in Ammiq	In/outside project area		
Permanent mesotrophic lakes, ponds, and pools	In/outside project area		

The GIS mapping exercise and consultations with local stakeholders resulted in a map of the three target landscapes with the locations where the climate-smart interventions will take place. This map clearly shows that the critical habitats in the table above do not overlap with the target areas for project interventions and therefore the project does not require measures to prevent impacts. On the contrary, the planned interventions will have a positive indirect effect on the protected habitats, since the reduction in the risk of large-scale fires and future burned area will make it unlikely that eventual fires will spread to protected habitats.

Principle 10: Conservation of Biological Diversity

The project is not expected to have any negative impact on critical biological diversity. The biodiversity assessment in the target SBR and MHNR landscapes, implemented by the EU-funded Bioconnect project and completed in October 2024, has assessed more than one thousand plant species in the SBR, Ammiq and MHNR areas. The analysis filtered a list of 73 rare, endemic, and/or threatened species included in the IUCN red list, as well as those of high economic value. The habitat types that occur in the high fire risk forest stands, where sustainable biomass management will be implemented, do not include any IUCN listed species.

In the case of grants for productive activities, the PMU will include in the contracts a list of native species with high economic and environmental value (contribution of pollination services, pest control, microclimate, soil fertilization, etc.) under production in local tree nurseries, to be used in the funded actions for diversification of production and restoration of agricultural habitats - hedges, cover vegetation, scattered trees - in/around farmland plots. In concrete, the species *Gundelia tournefortii, Origanum syriacum, Malus trilobata, Salix libani, Scorzonera mole, Lathyrus cicera, Lens culinaris, Triticum dicoccoides,* are important species for crop diversification and restoration of farmland/riparian

habitats in/around farmland plots, as well as a high economic and agroecological value. The task force experts who will assist the grant beneficiaries in the development of production plans will provide the necessary information on the suitable species in each case, the expected benefits, production and planting methods, availability of reproductive material in local nurseries, etc.

Principle 11: Climate Change

The project will not result in any significant or unjustified increase in GHG emissions or other drivers of climate change and will not promote any risk sectors such as energy, transport, heavy industry, building materials, large-scale agriculture, large scale forest products and waste management". ***No further action is required during implementation***.

Principle 12: Pollution Prevention and Resource Efficiency

The project will not pose any significant risks to resource efficiency (in particular water) or pollution risks and no further assessments will be required beyond the procedures already integrated into the project. On the contrary, the project will bring environmental benefits in sustainable resource management, through:

- The collection of water and promotion of efficient practices with regards to water use (micro- pressurized irrigation combined with solar energy, soil and water conservation practices through agroecology and other regenerative agriculture measures).
- Ecosystem restoration, sustainable management of forest-agriculture biomass, restoration of pastoral rotation/resting systems, and the pool regenerative agriculture production techniques, will improve the availability of ecosystem services (and carbon storage), or at least limit their expected loss due to extreme climate events. A reduced use of pesticides is expected from the project, which will actually support adoption of organic/biodynamic production practices.
- Through integrated biomass management (forest residues and agriculture/urban waste) the project will reduce pollution by avoiding agricultural burning and reducing the risk of wildfires. The combined use of forest, agriculture and livestock waste for bioenergy and composting, as well as the adoption of organic/biodynamic production techniques will also reduce the risk of olive processing residues, manure spills/dumping, and polluted agriculture wastewater in superficial and groundwater.

However, the adoption of sustainable biomass management and regenerative agronomic practices by the target farmers will occur gradually, so there is less risk that the pollution effects resulting from conventional practices (e.g. agrochemicals, burning of stubble, uncontrolled stacking of olive pomace waste from oil pressing) may partially persist in some localities in the first years of the project. The management of this problem will be carried out through training courses and awareness-raising actions at the beginning of the project, so that local farmers who will not apply for grants and/or who will benefit from grant tender to be awarded in project years 3 and 4, already have information and knowledge to reduce pollution problems prior to accessing funding.

Principle 13: Public Health

Although public health is not the primary focus of activities promoted in the project, it is not expected to cause adverse effect on this matter either.

The WHO explains that many factors combine to affect the health of individuals and communities. Whether people are healthy or not, is determined by their circumstances and environment. The main overarching determinants of health are the social and economic environment, the physical environment, and the person's individual characteristics and behaviours.

The project will improve all the determinants of health presented in the screening table below and as listed by the WHO. It will have a positive contribution to public health, by supporting livelihoods and local economies, improved diets and reduced vulnerability to climate shocks. Access to equipment reducing women's workload will also benefit their health. Reduction in the risk of forest fires will also decrease exposure to toxic fumes and respiratory problems for nearby inhabitants. Finally, by encouraging nutritional health through diversification of available edible products and supporting the livelihoods of poor rural households, quality of life should improve as well, which is recognised as having a positive effect on overall health.

A minor risk may occur due to the gradual adoption of project interventions with a positive effect on public health, and their lower positive impact in the first two years of the project. The implementation of fire risk reduction interventions in the target municipalities will occur gradually, so that the health problems resulting from smoke

emissions of potential fires shall be gradually minimized as the project's biomass management activities progress. Furthermore, the production and availability of briquettes and raising awareness among local families to buy them and replace the use of diesel for heating and cooking, which causes a major health problem in homes, will follow a gradual process, with greater effect in the last years of the project.

Determinants of health	Health risk	Mitigation measures	Project impact on health
Income and social status	Lower income and social status are linked to worse health	The project will target the most vulnerable and marginalized to provide them sustainable avenues for livelihood development. The project will reduce the risk on health posed by low income and social status.	Positive
Education	Low education levels are linked with poor health, more stress and lower self-confidence.	The project relies on capacity building and awareness raising activities that will increase the knowledge and confidence of targeted smallholders and other stakeholders.	Positive
Physical environment	Hazards in the physical environment can lead to health risks (e.g. toxic fumes from forest fires) Employment and working conditions – people out of employment are less healthy.	The Project will: promote integrated biomass management approaches that will reduce or mitigate the risk of large-scale wildfires; convert waste into bioenergy that will help replace fossil fuel in-house heating/cooking with a positive effect on household health; restore ecosystems and climate-smart production systems that will reduce climate hazards causing land erosion, and floods. The project will also reduce unemployment and increase livelihood possibilities through the development of professional skills and local entrepreneurship opportunities. The project will directly support the alleviation of women workload.	Positive
Social support networks	Greater support from families, friends and communities is linked to better health	The project relies on collaborative approaches and governance mechanisms, that have demonstrated their relevance in increasing social capital. The project will also directly support networks of women and youth.	Positive
Land use	Changes in land use, soil quality, choice of crop have impact on health	The implementation of climate-adapted nature-based solutions at farm, ecosystem and landscape levels should result in the conservation, improvement and/or restoration of close to 1,598 ha of land.	Positive
Unsustainable farming	Unsustainable farming including chemical and energy use, biodiversity, organic production methods, and diversity of foods produced	The project will promote regenerative agriculture systems and techniques and other climate resilient practices, which are sustainable forms of farming relying on limited to no chemical inputs.	Positive
Water	Irrigation use and its impact on surface and groundwater levels and production outputs can have negative impacts on health.	The project will support water storage infrastructure and efficient use of water (e.g. using micro-pressurized irrigation techniques combined with solar energy). This will have a direct impact on reducing water table extraction rates and combined soil and water conservation practices, improve productivity and human health.	Positive

A minor risk may occur due to the gradual adoption of project interventions with a positive effect on public health, and their lower positive impact in the first two years of the project. The implementation of fire risk reduction interventions in the target municipalities will occur gradually, so that the health problems resulting from smoke emissions of potential fires shall be gradually minimized as the project's biomass management activities progress. Furthermore, the production and availability of briquettes and raising awareness among local families to buy them and replace the use of diesel for heating and cooking, which causes a major health problem in homes, will follow a gradual process, with greater effect in the last years of the project.

The management of this problem will be carried out through training courses and awareness-raising actions at the beginning

of the project, so that fire ignition risk from agriculture waste burning – major cause of wildfires in the project area – may significantly reduce (farmers who participate in awareness-raising events and training programs will be able to avoid autumn burning of pruning remains, without having to have access to project funding) (farmers who benefit from the call for grants that are awarded in years 3 and 4 of the project already have information and knowledge to reduce pollution problems prior to accessing funding. Moreover, awareness sessions in the municipalities at the beginning of the project will also help to understand the problems and alternatives that families have to reduce health pollutants inside their homes.

Principle 14: Physical and Cultural Heritage

Lebanon ratified the Convention concerning the Protection of World Cultural and Natural Heritage in 1983. The project has already identified the priority climate-risk areas where the different project interventions will take place (Project Document Part I, section "Project Area and Targeting Strategy", Figure 15). There are no cultural heritage sites within and/or nearby the targeted areas.

Principle 15: Lands and Soil Conservation

The project will not have negative impacts on lands and soil conservation. On the contrary, the project will support ecological restoration actions to reduce the risk of land degradation and erosion, and the climate- smart productive practices of regenerative agriculture entail measures of no/reduced tilling, mulching and permanent vegetation cover that entail the regeneration of the structure, organic component and water retention capacity of agricultural soils. The project will support local communities, land users and managers in integrating all elements of climate-smart uses and practices and preparing municipal/landscape strategies to address the current and potential impacts of climate change.

The project will promote the *Ecosystem based Adaptation* (EbA) approach to restore degraded ecosystems and their services and allows agriculture and other livelihoods to become resilient to climate change. Watercourse forest restoration interventions will reduce the risk of land degradation derived from flooding. Likewise, integrated management actions of agricultural and forestry biomass in critical areas of the landscape with very high fire risk will reduce the probability of future fires occurring, avoiding future land degradation problems linked to the loss and degradation of burned ecosystems. By promoting EbA through nature-based solutions at both farmland and forest stand level and broader landscape level, and through integrated management approaches - linking agriculture, forest, livestock, energy and water – the project will ensure the comprehensive conservation of lands and soil in its intervention areas. It is expected that these interventions will enable the conservation, improvement and/or restoration of close to 1,598 hectares of land.

IV. Environmental and Social Management Plan

Below is a consolidated EMSP table synthesizing project safeguards for each priority of the Adaptation Fund's ESP and gender policy and reporting plan.

Environmental and Social Management Plan					
Outcome 1.1	Outcome 1.2	**Outcome 2.1**	**Outcome 2.2**	**Outcome 3.1**	**Outcome 3.2**

ESP1 Compliance with the law	The project complies with all the national relevant laws, regulations, and technical standards. In the absence of national standards, the project will apply internationally recognized standards. All bidding and tendering documents, as well as contracts signed with external contractors under the framework of the project will include an article informing about the applicable laws.
ESP2 Access and Equity	• Project design supports equal access to training, technical support, grand funding for equipment/inputs, and services, taking into account marginalized and vulnerable groups, namely: i) vulnerable smallholder farmers and forest users experiencing deprivations with respect to key living standards, ii) unemployed young women and men without professional skills that prevent them from accessing job and business development opportunities. • Planning and designing of climate-smart interventions is done through multi-stakeholder consultations and agreements with the vulnerable target groups that may benefit from project investments. • The project will take a number of transparent steps that will help ensure that the benefits of the project are being distributed fairly with no discrimination. • A targeting strategy, a social inclusion and gender action plan, and mechanisms for a clear and transparent communication about eligibility criteria and project procedures will be implemented. • The project will advertise broadly through different channels (e.g. municipal information points, local NGOs, social media, mobile messages, field visits, etc.) • The project will consult all local water users and involve beneficiaries in all stages of infrastructure development, from design, through operation and management, to rehabilitation and reconstruction, to ensure equitable, reliable, and sustained access to water.
ESP 3 Marginalized and Vulnerable groups	**The project will establish:** A targeting strategy, a gender and social inclusion action plan, and mechanisms for a clear and transparent communication about eligibility criteria and project procedures, as well as the commitment to reach 30% women and 30% youth. These mechanisms will include social inclusion trainings, broad information campaigns and outreach events targeting women and youth, and transparency on the public call processes. The project will also include specific measures to support gender equality and women's empowerment, targeting: (i) economic empowerment, (ii) voice and decision-making; and (iii) work-balance and well-being, as per the project's Gender Strategy (see Annex 5 Gender Assessment, Strategy and Action Plan). Responsibility for the development of these tools will lie with the Communication & Gender Specialist.
	Monitoring: Participation of the project target groups will be closely monitored through the M&E system, including a database of project beneficiaries. Specific attention will be given to participatory reflective monitoring using self-assessment protocols and tools. The Grievance Redress Mechanism will also represent an avenue for reporting in case individuals and/or communities feel excluded or marginalized from project benefits. The PMU (and in particular the Communication & Gender Specialist), Municipalities and project partners will ensure that targeting objectives are met and most vulnerable smallholders are indeed included in all project activities. The specific indicators, responsibilities and costs associated with the project's Gender Action Plan are outlined in Annex 5.
	Reporting: The project will submit biannual progress reports; annual supervision reports to IFAD as well as the annual PPR to the Adaptation Fund; MTR and final evaluation and completion survey. These reports will track beneficiaries' numbers by category and present progress with regards to the indicators of the Gender Action Plan (see Annex 5 for detail).
ESP 4 Human Rights	The project is designed to respect and adhere to the requirements of all relevant conventions on human rights. IFAD is committed to support borrowers in achieving good international practices by supporting the realization of United Nations principles expressed in the Universal Declaration of Human Rights and the toolkits for mainstreaming employment and decent work. The project will address the recommendation of the 2022 report of OHCHR from the Special Rapporteur on extreme poverty and human rights: "Women's access to employment should be improved and the gender wage gap addressed" through the effective implementation of

	the project Gender Action Plan.
ESP 5 Gender Equality and Women Empowerment	Participation of the project target groups will be closely monitored through the M&E system, including a database of project beneficiaries. The Grievance Redress Mechanism will also represent an avenue for reporting in case individuals and/or communities feel excluded or marginalized from project benefits. The PMU (and in particular the Communication & Gender Specialist), Municipalities and project partners will ensure that targeting objectives are met and women beneficiaries are included in all project activities, in line with the pre-defined quotas. The specific indicators, responsibilities and costs associated with the project's Gender Action Plan are outlined in Annex 5.
ESP 6 Core Labour Rights	The project will comply with the relevant labour regulations. Appropriate labour contract templates will be required prior to the work/grant commencing and checked by the M&E officer and task force of experts, and regular monitoring will occur throughout the implementation of works and grants. Documentation and reporting of occupational incidents will be kept.
ESP 12 Pollution prevention and resource efficiency	**The project will establish:** Awareness raising, information and guidance on the project activities supporting pollution prevention measures. Inclusion of pollution reduction information and guidelines associated with climate-smart interventions in training programs. Criteria on pollution reduction benefits expected under the grant funding applications. Provision of information, awareness and guidelines on pollution prevention/reduction linked to the supported activities by the TFE to the project beneficiaries.
	Monitoring: The project's M&E Specialist will incorporate the following pollution reduction indicators: (i) overall beneficiaries adopting pollution reduction measures, disaggregated by gender and type of measure; (ii) burned area reduction percentage in the target municipalities; (iii) nº of hectares with fuel load management and watercourse bank restoration, into the project's indicator database to incorporate information on locations/actors/actions whose actions have a positive pollution reduction impact in these areas. This will allow to follow-up the positive impact in terms of pollution reduction in the target areas. The M&E Officer will conduct periodic visits and interviews in the target municipalities to collect information on these and other indicators, which will be reported on quarterly.
	Reporting: Monitoring results will be integrated in the project reporting system, both biannually for the progress reports, as well as annually in the PPR to the AF.
ESP 13 Public health	**The project will establish:** Awareness raising, information and guidance on the project activities supporting public health prevention measures. Inclusion of public health information and guidelines associated with climate-smart interventions in training programs. Criteria on public health benefits expected under the grant funding applications. Provision of information, awareness and guidelines on public health improvement linked to the supported activities by the TFE to the project beneficiaries.
	Monitoring: The project's M&E Officer will incorporate public health indicators (similar to the pollution reduction indicators, as pubic health issues in the project will be intimately linked to pollution reduction interventions) into the project's indicator database. It will report on: (i) overall beneficiaries adopting pollution reduction measures, disaggregated by gender and type of measure; (ii) burned area reduction percentage in the target municipalities; (iii) nº of hectares with fuel load management and watercourse bank restoration. The M&E Officer will conduct periodic visits and interviews in the target municipalities to collect information on these and other indicators, which will be reported on quarterly.
	Reporting: Monitoring results will be integrated in the project reporting system, both biannually for the progress reports, as well as annually in the PPR to the AF.

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ESCMP Matrix						
Environmental, Social and Climate impacts	**Recommended mitigation/enhancement measures**	**Public consultation activities**	**Institution responsible for implementation**	**Means of verification**	**Verification frequency**	**Estimated cost**
Compliance with the Law	All interventions will be compliant with national and international law. However, there is a minor risk of non-compliance by external contractors hired during implementation. Compliance by service providers will be ensured through contractual arrangements including provisions with reference to relevant laws.	During project design, consultations with local and national stakeholders took place, with extensive discussions on applicable laws in line with the proposed activities.	PMU	A sample of contracts will be checked during supervision missions by the IE Procurement Specialist.	Twice a year during IFAD supervision missions	The cost is embedded in the PMC and in the IE fees for biannual supervision missions.
Access and Equity	Participation of the project target groups will be closely monitored through the M&E system. However, the project might pose a minor risk of inequitable access to project benefits, due to a potential biased selection of project beneficiaries. The project will take several transparent steps that will help ensure that the benefits are being distributed fairly with no discrimination nor favouritisms. Primarily, project targeting has been agreed with the MoE and comprises targeting criteria based on gender and age quotas. The project will advertise broadly through the mass media (radio, social media, municipality meetings, workshops, etc.) for the implementation of an outreach/mobilization strategy. Beneficiaries will be explained, as they have been throughout the participatory and gender-balanced consultations	During project design, consultations have been carried out with the targeted vulnerable groups with gender disaggregation	The PMU (and in particular the Communication & Gender Specialist), in collaboration with the Municipalities and partners, will ensure adherence to the mitigation measures listed in the ESMP.	The project will submit biannual progress reports; as well as the annual PPR to the Adaptation Fund. These reports will highlight any incident notified through the GRM, and reflect progress on sensitization activities (information campaigns and social inclusion trainings).	Twice a year during IFAD supervision missions	The cost is embedded in project activities for the Gender and Communication Specialist and in the IE fees for biannual supervision missions.

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	during the design, that this is a project with a strong focus on women and youth, but that also adult men will also be eligible. The project will adopt call for applications with evaluation criteria and standards for both the grants scheme and the call for tenders for ecosystem management/restoration works, as a transparent instrument including several steps and independent selection committees to target beneficiaries of interventions and implementation partners. The Grievance Redress Mechanism will also represent an avenue for reporting in case individuals and/or communities feel excluded or marginalized from project benefits.					
Marginalized and Vulnerable Groups:	The project poses a minor risk related to marginalized and vulnerable groups. The project will ensure that the most marginalized groups in the target areas are included in project activities through: Establishment of a targeting strategy, a gender and social inclusion action plan, and mechanisms for a clear and transparent communication about eligibility criteria. Organization of social inclusion trainings, broad information campaigns and outreach events targeting women and youth. Since September 2024, the deterioration of the regional political conflict has affected the country, determining an increase in number of IDPs. This is an emerging phenomenon that cannot be comprehensively assessed for the time being, given the ongoing security conditions	During project design, consultations have been carried out with the targeted vulnerable groups with gender disaggregation. Additional consultations will be conducted with IDPs at project start-up.	PMU, task force of experts, ToT trained extensionists, and the grant scheme managers, will be responsible for informing, training and providing technical assistance to targeted vulnerable beneficiaries	Training evaluation reports; grant implementation and field mission reports. The project will submit biannual progress reports; as well as the annual PPR to the Adaptation Fund. These reports will highlight any incident notified through the GRM, and reflect progress on sensitization activities (information campaigns and social inclusion trainings).	Twice a year (technical assistance); Mid-term and end-project monitoring reports.	Built in project costs for trainings. The cost of additional consultations will be covered by IE fees.

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	on the ground. Based on the security situation at implementation, the team will assess whether IDPs are present in the target areas and if so, conduct the needed consultations and assessments with the relevant stakeholders and local authorities and tailor the project activities accordingly, if needed.					
Human Rights	The project is designed to respect and adhere to the requirements of all relevant conventions on human rights in compliance with the ESP. The 2022 report of OHCHR from the Special Rapporteur on extreme poverty and human rights includes the following priority recommendation: "Women's access to employment should be improved and the gender wage gap addressed." Appropriate assessment of gender access to employment and fair gender wages will be conducted by the Gender and communication Officer and task force of experts, and regular monitoring will occur throughout the implementation of works and grants.	During project design, consultations with local and national stakeholders.	PMU, TFE, guided by the Gender and Communication Officer	Report of the assessment conducted by the Gender and Communication Officer on access to employment and fair wages for female beneficiaries. Regular monitoring done through a sample check of the grants awarded to women and number of female workers contracted for the execution of works, including their wages.	Once a year following the start of project works. Technical supervision by IFAD twice a year.	Costs are covered by the salary of the Gender and Communication Officer.

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Gender Equality and Women's Empowerment	The project poses a minor risk of discrimination in beneficiary selection towards female beneficiaries. The gender action plan with specific gender indicators and targets for the project outputs and outcomes, will guide and monitor all actions, as specified in Annex 4, and project document Part III, Section D The project includes a M&E officer as well as a Communications & Gender Specialist. Both will ensure that the system collects gender and age disaggregated data, produces gender knowledge and monitors investments in poor and climate vulnerable regions, and that the Grievance Redress Mechanism is well-functioning and successfully addresses any issue raised.	During project design, consultations have been carried out with the targeted vulnerable groups with gender disaggregation.	PMU, guided by the Gender and Communication Officer and the M&E Officer	Logframe, Progress Reports, as well as reports of trainings conducted under the framework of the project. The project will submit biannual progress reports; as well as the annual PPR to the Adaptation Fund. These reports will highlight any incident notified through the GRM, and reflect progress on sensitization activities (information campaigns and social inclusion trainings).	Twice a year through project reports.	Costs are covered by the salary of the Gender and Communication Officer and M&E Officer.
Core Labour Rights	The project will comply with the relevant labour regulations. However, a minor risk of non-compliance might arise from external contractors hired during implementation. Appropriate labour contract templates will be required prior to the work/grant commencing and checked by the M&E officer and task force of experts, and regular monitoring will occur throughout the implementation of works and grants. Documentation and reporting of occupational incidents will be kept.	During project design, consultations with local and national stakeholders.	PMU	The project will submit biannual progress reports; as well as the annual PPR to the Adaptation Fund. These reports will highlight any incident notified through the GRM, or occupational incidents that happened during project works.	Twice a year during IFAD supervision missions.	No additional costs, as the provisions are embedded in project activities.

Pollution prevention and resource efficiency:	Awareness raising, information and guidance on the project activities supporting pollution prevention measures. Inclusion of pollution reduction information and guidelines associated with climate-smart interventions in training programs. Criteria on pollution reduction benefits expected under the grant funding applications. Provision of information, awareness and guidelines on pollution prevention/reduction linked to the supported activities by the TFE to the project beneficiaries.	During project design, consultations with local and national stakeholders.	PMU, task force of experts and ToT trained extensionists, NGOs and/or consultancy firms in charge of the biomass management and ecosystem restoration works, protected area managers, municipality staff.	Training evaluatio n reports; grant implementation and field mission reports.	Twice a year (technical assistanc e); Mid-term and end-project monitorin g reports.	Proportional part of the budget for training (Outcome 1.1), biomass managemen t and ecosystem restoration works (Output 2.1.1), grant funding for regenerative/biodynamic agriculture production (Output 2.2.1), grant funding for local businesses(Output 2.2.2), technical assistance and production of communicati on materials.
Public health	Awareness raising, information and guidance on the project activities supporting public health prevention measures. Inclusion of public health information and guidelines associated with climate-smart interventions in training programs. Criteria on public health benefits expected under the grant funding applications. Provision of information, awareness and guidelines on public health improvement linked to the supported activities by the TFE to the project beneficiaries.	During project design, consultations with local and national stakeholders.	PMU, task force of experts and ToT trained extensionists, NGOs and/or consultancy firms in charge of the biomass management and ecosystem restoration works, protected area managers, municipality staff.	Training evaluatio n reports; grant implementation and field mission reports.	Twice a year (technical assistanc e); Mid-term and end-project monitorin g reports.	Proportional part of the budget for training (Outcome 1.1), biomass managemen t and ecosystem restoration works (Output 2.1.1), grant funding for regenerative/biodynamic agriculture production (Output 2.2.1), grant funding for local businesses(Output 2.2.2), technical assistance and production of communicati on materials.

ESMP Monitoring and reporting

As described in section III – D of the proposal, the project will have a comprehensive monitoring and reporting program that will include quarterly reports, technical reports, annual project reports, the AF PPR tracking, annual IFAD supervision mission reports, a Mid-term Review and a final evaluation and impact assessment.

The monitoring and reporting of the ESMP will be commensurate with the limited ESMP requirements for the project. ESP compliance for ESPs 1, 2, 3, 4, 5, 6, 12 and 13 will be reported on through the annual PPR and supervision missions. Such documents will highlight, to what extent the population of the target municipalities, land owners and users, who directly or indirectly access the information and knowledge provided by the project's awareness-raising and training actions regarding pollution reduction and public health measures, adopt risk reduction measures without or prior to accessing grant funding.

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The project's Monitoring & Evaluation Specialist will incorporate pollution reduction and public health improvement indicators into the project's indicator database to incorporate information on locations/actors/actions whose actions have a positive impact in these areas and will conduct periodic visits and interviews in the target municipalities to collect information on these and other indicators, which will be reported on quarterly. The M&E Specialist will also develop a database of project beneficiaries.

IFAD as the Implementation Entity of the project will supervise ACS through in-country supervision and implementation support missions, including a Gender and Social Inclusion Expert and one Environmental and Climate Change Expert. The two specialists will ensure that all necessary provisions are in place for a correct implementation of the ESCMP and will further assess progress in the implementation of environmental and social safeguards throughout implementation. A dedicated M&E Officer will also take part in the supervision missions, assessing the correct monitoring of the indicators included in the ESCMP. IFAD will further provide continuous remote support to the PMU to ensure adherence to the ESCMP provisions and timely risk mitigation should additional risks arise.

In relation to the other ESPs that do not require a specific management plan, the project monitoring plan includes indicators related to the benefits that the actions and investments will have on them. Specifically:

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Access and equity	· Participation of the project target groups will be closely monitored through the M&E system. Specific attention will be given to participatory reflective monitoring by using self-assessment protocols and tools. The Grievance Redress Mechanism will also represent an avenue for reporting in case individuals and/or communities feel excluded or marginalized from project benefits. The PMU (and in particular the Communication & Gender Specialist), Municipalities, and local partners will ensure that no tensions or conflicts arise around the targeting approach. · The project will submit biannual progress reports, as well as the annual PPR to the Adaptation Fund; MTR and final evaluation and completion survey. These reports will highlight any incident notified through the GRM, and reflect progress on sensitization activities (information campaigns and social inclusion trainings).
Human rights	· Appropriate assessment of gender access to employment and fair gender wages will be conducted by the M&E officer and task force of experts, and regular monitoring will occur throughout the implementation of works and grants.
Gender equality and women's empowerment	· The gender action plan with specific gender indicators and targets for the project outputs and outcomes, will guide and monitor all actions, as specified in Annex 4, and project document Part III, Section D.
Core Labour Rights	· Appropriate labour contract templates will be required prior to the work/grant commencing and checked by the M&E officer and task force of experts, and regular monitoring will occur throughout the implementation of works and grants. Documentation and reporting of occupational incidents will be kept.

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Protection of natural habitats	· The project results framework has defined AF Core Impact Indicators and targets on "Natural Assets Protected or Rehabilitated", to monitor progress and impacts in terms of number of hectares of restored and sustainably managed natural and farmland habitats. · The project will apply self-assessment monitoring tools (e.g. the IBP-Index of Biodiversity Potential; IUCN IMET system) engaging relevant key stakeholders - forest users/managers and protected area managers - to apply targeted monitoring of climate change impacts on key biodiversity and ecosystem services' indicators of healthy habitat attributes (e.g. vertical structure, species diversity, deadwood, microhabitats, regeneration, etc.) and integrate results of monitoring into management processes to continually improve management decisions. · Monitoring results will be integrated in the project biannual progress reports; annual supervision reports to IFAD as well as the annual PPR to the Adaptation Fund; MTR and final evaluation and completion survey.
Conservation of biodiversity	· In the same was as for the ESP of natural habitats, the project will apply self-assessment monitoring tools (e.g. self-assessment protocols for biodynamic production system; IBP; IUCN IMET) engaging relevant key stakeholders – farmers, forest users/managers and protected area managers - to apply targeted monitoring of climate change impacts on key biodiversity and ecosystem services' indicators of healthy species populations and integrate results of monitoring into management processes to continually improve management decisions. The number of native species and seedlings from local agrobiodiversity that are used in the farmland plots under regenerative/ biodynamic agriculture production will be collected as an indicator on agrobiodiversity improvement. · Monitoring results will be integrated in the biannual progress reports; annual supervision reports to IFAD as well as the annual PPR to the Adaptation Fund; MTR and final evaluation and completion survey.
Climate change	· All project indicators and targets are linked to climate change adaptation and risk reduction. Therefore, the project M&E plan will fully report on this ESP. · The project has identified key climate risks, mapped high climate risk areas in the target landscapes, and prioritized climate- smart interventions that are aligned with the Lebanon NDC adaptation priorities. The project has analysed the adaptive capacity of the concerned stakeholder groups and the climate resilience of the landscape LU/LC types to prioritize policy, capacity development, ecosystem restoration, sustainable natural resources management, and value chain development interventions enhancing the adaptive capacity and resilience of landscapes and Livelihoods. · Monitoring results will be integrated in the biannual progress reports; annual supervision reports to IFAD as well as the annual PPR to the Adaptation Fund; MTR and final evaluation and completion survey.
Lands and soil conservation	· The project results framework has defined AF Core Impact Indicators and targets on "Natural Assets Protected or Rehabilitated", to monitor progress and impacts in terms of number of hectares of restored and sustainably managed natural and farmland plots. · Monitoring results will be integrated in the biannual progress reports; annual supervision reports to IFAD as well as the annual PPR to the Adaptation Fund; MTR and final evaluation and completion survey.

ESMP Consultation

The design team conducted several missions and workshops between October 2023 and June 2024, during which a wide range of stakeholders have been consulted. The field survey and focus groups were instrumental in informing the development of project interventions and the activities were subsequently designed based on local community concerns and needs. During the field visits every effort was made to understand ESP risks, potential adverse impacts and measures to manage them. As previously mentioned, the project design team has undertaken research and consultations to ensure that the project complies

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with the Lebanon's national technical standards that regulate the type of adaptive activities prioritized in the project. During design vulnerable and marginalized groups were assessed, identified, targeted and included in all field consultation events and workshops to understand how climate risks affect them and the type of climate-smart interventions that help improve socio-ecological resilience and livelihoods. Multi-stakeholder consultation events and workshops included discussions about the project mechanisms that help ensure that the benefits will be distributed fairly with no discrimination nor favoritisms, such as targeting criteria based on gender and age quotas throughout project interventions, and a broad outreach/mobilization strategy accessible. The project has conducted a Gender Assessment as required by the AF Gender Policy, and ensured fair participation of vulnerable women and women groups during consultation events and workshops to capture gender inequality related to climate risks, and discuss specific gender needs in terms of adaptive capacity, equitable participation and access to information, training, finance, technical support, employment, business development, balance of workload and the sharing of economic and social benefits between women and men.

In terms of core labour rights, the project design team has consulted with managers and employees of local small businesses (e.g. women's agri-food processing cooperatives, briquette factories, composting units, farmers' cooperatives, foremen with working crews active in forestry) to understand the organisation, recruitment and occupational risk prevention measures used. The design team has also discussed with ACS personnel the types of legal contracts used in similar types of interventions to those in the project, which have been used as an example to describe the contracting criteria to be followed by contracts within the framework of the project.

In terms of the protection of natural habitats and the conservation of biological diversity, the design team carried out workshops and consultations (in the field and online) between October 2023 and June 2024 with the team of experts who were carrying out the biodiversity assessment in the Shouf Biosphere Reserve (including also Ammiq Ramsar Site) and Mount Hermon Nature Reserve, within the framework of the EU BioConnect project, managed by ACS, and which ended at the end of October 2024. The assessment and discussion with the experts revealed that the target sites in the development areas of both reserves do not include priority habitats for conservation, nor threatened species included in the IUCN red list. The relevance of the measures proposed by the project in terms of ecological restoration and sustainable natural resource management, which are in line with the SBR conservation plans, recommendations and guidelines, was also discussed.

The objective of the project is focused on climate change adaptation and risk reduction, so all consultations and workshops with local and national stakeholders have focused on the presentation, discussion and validation of the climate risk analysis (including the GIS prioritisation map of areas with high climate risks in the target landscapes) and the main climate-smart adaptation measures (mitigation in some cases) and risk reduction. Specifically, the consultations with stakeholders and validation of proposed adaptive measures with added mitigation value (e.g. reducing the risk of wildfires through the management, processing and marketing of forest, agriculture and urban waste in the form of briquettes and compost, replacing diesel in heating and cooking with briquettes, and replacing synthetic agrochemicals with organic/biodynamic fertilisers, weed and pest control), respond to the reduction of risks and impacts in relation to the ESP on Pollution Prevention and Resource Efficiency and public health. All climate-smart measures discussed for ecological restoration, sustainable management of forests and pastures and regeneration of agricultural soil (biodynamic regenerative agriculture) and validated during consultations with local stakeholders respond to the reduction of risks and impacts linked to the ESP lands and soil conservation.

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ANNEX 4
GENDER ASSESSMENT, STRATEGY AND ACTION PLAN

1. Acronyms

AF	Adaptation Fund
AIW	Arab Institute for Women
CAS	Central Administration of Statistics
CEDAW	Convention on the Elimination of All Forms of Discrimination against Women CMR Clinical Management of Rape
CRC	Convention on the Rights of the Child
CSO	Civil Society Organization
DGCS	Directorate General of Civil Status
DRR	Disaster Risk Reduction
ESMP	Environmental and Social Management Plan
FAO	Food and Agriculture Organization
FMP	Forest Management Plan
GAL	Gender Action and Learning
GBV	Gender-based Violence
GBVIMS	Gender-based Violence Information Management System
GDI	Gender Development Index
GDP	Gross Domestic Product
GHG	Greenhouse Gas
GII	Gender Inequality Index
GLTN	Global Land Tool Network
GP	Gender Policy
HDI	Human Development Index
HLP	Housing, Land and Property
ILO	International Labour Organization
IFAD	International Fund for Agriculture Development
IPV	Intimate Partner Violence
LAU	Lebanese American University
LEDS	Low Emission Development Strategy
LFHLCS	Labour Force and Household Living Conditions Survey
LNGO	Lebanon National Gender Observatory
LUPD	Lebanese Union for People with Physical Disabilities
M6E	Monitoring and Evaluation
MENA	Middle East and North Africa
MGF	Mashreq Gender Facility
MoA	Ministry of Agriculture
MoE	Ministry of Environment
MoPH	Ministry of Public Health
NAMA	Nationally Appropriate Mitigation Actions
NAS	National Agriculture Strategy
NBSAP	Lebanon's National Biodiversity and Action Plan
NCWL	National Commission for Lebanese Women
NDC	Nationally Determined Contribution
NEEAP	National Energy Efficiency Action Plan
NFP	National Forest Program
NREAP	National Renewable Energy Action Plan
NSSF	National Social Security Fund
PMU	Project Management Unit
SECAP	IFAD's Social, Environmental and Climate Assessment Procedures
SME	Small and Medium Enterprise
SO	Specific Objective
SOP	Standard Operating Procedure
SRHR	Sexual and Reproductive Health Rights
STI	Sexually Transmitted Infections

TED	Technology, Entertainment, Design
TF	Task Force
UNDP	United Nations Development Organization
UNFCCC	UN Framework Convention on Climate Change
UNFPA	United Nations Population Fund
VDO	Vital Dye Observatory
WE	Women Empowerment
WEF	World Economic Forum

2. Purpose

The purpose of this specific 'gender annex' is to demonstrate (in an overview) how this project will comply to the Adaptation Fund Gender Policy (GP). A gender approach and data baseline has been established, which is necessary at the project start against which implementation progress and results can be measured. In line with IFADs SECAP (Social, Environmental and Climate Assessment Procedures), the approach includes the identification and promotion of economic, social, and environmental benefits and opportunities for women and youth for each project activity (which can be seen as an additional safeguard area). During project preparation a 'gender assessment' has been conducted to identify potential project gender equality and women's and youth empowerment issues, but also opportunities. The outcomes are summarized below, as well as arrangements that will be taken during project implementation to comply to the AF GP, including how the project contributes to improving gender equality, the empowerment of women and youth and the project interventions' suitability to meet the adaptation needs of targeted women, men and youth.

3. Methodology

During the project preparation phase, potential gender equality and women's and youth empowerment challenges and opportunities have been identified through initial data analysis / desk research, surveys and focus group discussions with women, youth and other groups. Through these methods, specific women and youth needs and perceptions were identified, as well as potential gender-related risks and impacts, including possible concerns regarding proposed project activities.

4. Specific considerations and phases

4.1. Determinants for gender-responsive stakeholder consultations

Several consultations were conducted as part of this assessment and included both focus group meetings and Key Informant Interviews as shown in Table 1.

Table 6- Stakeholders consulted to develop gender approach

Type of stakeholder	Specific stakeholder
Local communities	- Community consultations and focus group discussions with women and youth.
Execution entity and partner organizations (NGOs, Researchers, Municipalities).	- Consultations and meetings with organizational managers and staff.
Central Government	- One to One meeting with NCLW (National Commission for Lebanese Women).

4.2. Situational Analysis

Lebanon faces numerous hurdles to the achievement of gender equality, including the broad effects of recent regional conflicts and the presence of nearly 2 million refugees in the country.

Lebanon extends over 10,452 km^2 and is comprised of eight governorates, referred to as *Mouhafaza*, with each further divided into a combined total of 26 districts, known as C*aza*. The three areas targeted by the project fall within the Caza of Shouf, Rashaya and West Beqaa knowing that both Rashaya and West Beqaa districts fall with the Beqaa Governorate while the Shouf Caza falls within the Mount Lebanon Governorate.

4.2.1. Demographics

The last official population census in Lebanon was carried in the 1960s. As a result, there is no single definitive figure accurately representing the total population in Lebanon. However, the Central Administration of Statistics (CAS) of Lebanon in its "Labour Force and Household Living Conditions Survey" (LFHLCS) (2018-2019) estimated the Lebanese population to be 4,842 million residents[136] with women making up 51.6% of the resident population, while men represent 48.4%.

The survey results show that in 2018–19, the caza of West Beqaa and Rashaya hosted 1.8 percent of residents of

[136] Labour Force and Household Living Conditions Survey (LFHLCS) 2018-2019 Lebanon. Copyright © Lebanese Republic Central Administration of Statistics (CAS); International Labour Organization (ILO); European Union (EU) 2020.

Lebanon with around 86,400 residents. 51.3 percent of the residents were females and 48.7 percent males. On the other hand, the caza of Shouf hosted 5.7 percent of residents of Lebanon, with around 277,000 residents. 50.9 percent were females and 49.1 percent males.

The CAS/LFHLCS reports at the Caza level were generated during 2018-2019. Hence, any data pertaining to demographics, education, and employment/unemployment status may not retain its validity post the financial crisis. Additionally, demographic shifts could have occurred due to the migration of numerous families and members of the labour force, youth in particular, since the onset of the economic crisis (October 2019). Despite these potential gaps, CAS/LFHLCS reports are used in the analysis due to the limited availability of other gender-specific information regarding the hotspot areas.

It should be mentioned that the World Population prospects 2022 elaborated by the United Nations Department of Economic and Social Affairs, Population Division, estimated the current population of Lebanon to 5,231,169 with 48.44 percent of man and 51.56 percent of female.

Life expectancy at birth for women in 2021 is 77 years old.[137] And the fertility rate is in decline whereby it was 2.032 births per woman in 2022, as compared to 2.047 in 2021, hence a decline of 0.73 percent.

At the level of the three areas targeted by the project, the Directorate General of Civil Status (DGCS) data (**Table 7**) shows the disparity in the distribution amongst the three regions whereby the Shouf area witnesses the highest numbers of registered voters as well as the number of births and deaths.

Table 7-Statistics for the three Cazas (2023)

	Shouf	Rachaya	West Beqaa
Registered voters	214,076	52,595	102,911
Male	104,125	26,318	51,359
Female	109,951	26,277	51,552
Total births	2,470	714	1,945
Male	1,288	380	1,035
Female	1,182	334	910
Total deaths	1,364	270	597
Male	740	138	331
Female	624	132	266
Marital applications	1,275	325	784
Divorce applications	420	81	209

Source: Ministry of Interior and Municipalities. Directorate General of Civil Status. 2023. https://www.dgcs.gov.lb/arabic/statistics-map

4.2.2. Performance according to international gender equality indices

Lebanon is an active member of the global community, promoting gender equality with some exceptions. Despite all this, gender inequality is endemic to all aspects of life in Lebanon, starting with its legal foundation. The 2021 female HDI (Human Development Index) value for Lebanon is 0.650 in contrast with 0.737 for males, resulting in a GDI (Gender Development Index)[138] value of 0.882, placing Lebanon into Group 5[139].

Lebanon has made progress in reducing the differences between women and men in human capital endowments, particularly in health and education. Lebanon's overall Human Capital Index score[140] is the same for girls and boys, with girls having similar or only slightly lower survival rates, test scores and expected years of schooling[141].

Lebanon has a GII (Gender Inequality Index) value of 0.432, ranking it 108 out of 170 countries in 2021.The GII measures gender inequalities (the loss in human development due to inequality between female and male achievements) in three key dimensions – reproductive health, empowerment, and labour market. Reproductive health is measured by maternal mortality ratio and adolescent birth rates; empowerment is measured by the shares of parliamentary seats held and population with at least some secondary education by each gender; and labour market participation is measured by the labour force participation rates for women and men.

According to the World Economic Forum, Lebanon has fallen 13 places in its 2023 global gender equality ranking whereby it is ranked 132nd out of 146 countries. Economic collapse, high unemployment and increasing poverty are affecting people of all genders, but it is women who are bearing the brunt of the social and economic consequences. This includes being economically side-lined, taking on more unpaid labour in the home, experiencing higher levels of food insecurity and poverty, and being subjected to domestic violence.

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137 Data from World Bank Lebanon | Data (worldbank.org)

138 The GDI is a ratio of the female to the male HDI. It measures the levels of gender parity within societies, and it ranges from zero (perfect gender equality) to around one (no gender parity).

139 Group 5: Countries with absolute deviation from gender parity of more than 10 percent are considered countries with low equality in HDI achievements between women and men.

140 The World Bank's Human Capital Index measures the amount of human capital that a child born today can expect to attain by age 18, given the risks of poor health and poor education that prevail in the country where she lives

141 World Bank - 2020

Finally, Lebanon holds the 128th position with a score of 0.595 out of 177 countries in the Women, Peace, and Security Index 2023/24.[142] For comparison, Denmark holds the top position with a score of 0.932. This report places Lebanon within both the category of MENA countries and fragile states simultaneously.

4.2.3. Discriminatory social norms

Most of the abuses and discriminatory acts experienced by women and girls in Lebanon are the direct product of imbalances between women and men in the patriarchal Lebanese society, which are codified into law and entrenched in social norms, practices and beliefs at every level.

This fact is exacerbated by the nonexistence of a unified personal status law. Indeed, Lebanon has 18 religious' sects with 15 related personal status codes, meaning every woman is treated differently based on her religion. Gender discrimination remains rife in Lebanon's legal framework, particularly in relation to divorce, citizenship, inheritance and child custody.

The IMAGES MENA survey conducted by UN Women[143] show that shifts in livelihoods, a working wife, migration, and other factors can prompt some men to take on more domestic work, but the overall trend speaks to widespread inequality in sharing household duties which are still mostly carried by women. As with domestic work, there is a greater involvement in routine caregiving provided by men, but these are linked to times of conflict or war when men are unable to play the role of provider, or when women are less able to undertake this work because of pregnancy, illness, or injury.

There is an urgent need to engage young men in the future of gender equality in the region. Across the Arab World, young people in the 15 to 29-year age category represent more than 30 percent of the population. Moreover, the IMAGES MENA findings, presented in more detail below, underscore how young men often have inequitable attitudes about gender roles and stereotypes in society. This study also concluded on the fact that full gender equality will only be attained when youth, female and male, collaborate in partnerships with fully gender-transformative approaches and goals.

On the other hand, it must be noted that Lebanon has a long tradition in civil society activism, that results in Lebanon having one of the most active feminist movements in the Arab region that have been demanding change for decades.

4.2.4. Education

Regarding education, gender parity is good with similar average years of schooling corresponding to 8.5 percent for women and 8.9 percent for men. Enrolment rate among females is about equal to that of males at the primary level but it is higher for females in all other levels of education from the intermediate level through university. However, the school enrolment rates of girls have witnessed a worrying 20% drop in the span of a year, decreasing from 60 percent of girls enrolled in schools in 2020-2021 to 40 percent in 2022. At the level of the cazas, the CAS Labour Force and Household Living Conditions Survey provided data related to enrolment on the elementary intermediate and secondary levels, these are detailed in **Table 8**.

Table 8-Enrolment by level of education (in %)

Level of education	Shouf		West Beqaa & Rashaya		Lebanon	
	Gross Enrolment ratio[144]	Net enrolment ratio[145]	Gross Enrolment ratio	Net enrolment ratio	Gross Enrolment ratio	Net enrolment ratio
Elementary level	100.7	88.7	97.7	98.9	98.9	87.2
Intermediate level	90.8	69.0	68.0	93.4	93.4	67.8
Secondary level	88.0	61.9	58.1	76.8	76.8	54.9

Source: Labour Force and Household Living Conditions Survey (LFHLCS) 2018-2019 Lebanon

Regarding tertiary education which in Lebanon is provided by technical and vocational institutes, university colleges, university institutes and universities, and according to the World Bank database, gross enrolment rate is 46.9 percent for male, 56.3 percent for female, and 51.6 percent for total[146]. While there are more women with tertiary education, significant gender differences remain in terms of university field of study; few women are represented in science,

[142] Georgetown Institute for Women, Peace and Security and Peace Research Institute Oslo. 2023. Women, Peace, and Security Index 2023/24: Tracking sustainable peace through inclusion, justice, and security for women. Washington, DC: GIWPS and PRIO. Women, Peace, and Security Index 2023/24 (georgetown.edu).

[143] North Africa - Egypt, Lebanon, Morocco, and Palestine, UN Women, ProMundo.

[144] The Gross Enrolment Ratio (GER) is defined as the number of students enrolled in a given level of education, regardless of age, expressed as a percentage of the official school-age population corresponding to the same level of education. A high GER generally indicates a high degree of participation, whether the pupils belong to the official age group or not. A GER value approaching or exceeding 100% indicates that a country is, in principle, able to accommodate all of its school-age population.

[145] The Net Enrolment Rate (NER) is defined as the total number of students in the theoretical age group for a given level of education enrolled in that level, expressed as a percentage of the total population in that age group. A high NER denotes

[146] The World Bank - 2009

technology, engineering or math. The main inequality in education is between urban and rural areas where higher education is not always available.
On the national level, the illiterate residents aged 3 years and above were twice as high among females (8.7 percent) as among males (4.4 percent). On the level of the cazas, gender discrepancies were more observed where the proportion of illiterate women (9.8 percent for Shouf and 9.9 percent for West Beqaa and Rashaya)) was three times as high as that of men (3.3 percent for Shouf and 4.6 percent for West Beqaa and Rashaya). This result may be explained by the fact that the proportion of elderly women aged 65+ years is greater than that of men and that that the illiteracy rate among them is greater.

4.2.5. Women's political participation

Lebanese women gained the right to vote in 1952, and despite a vibrant feminist movement, women remain grossly under-represented in public and political life. According to the World Economic Forum (WEF) Gender Gap Index for 2023, Lebanon ranked 132 out of 146 countries, which is a worrisome drop as compared to the 2022 ranking where Lebanon stood at 119 out of 146 countries. In terms of women's participation in parliament, Lebanon is ranked 183 out of 187 countries. Although the specific reasons for this decline have not been documented, literature evidence suggests that it is primarily attributed to the turmoil Lebanon has experienced since the onset of the economic crisis in 2019.
Out of the 88 Lebanese governments formed since 1943, only 9 governments have included women. Furthermore, in December 2016, a Ministry of State for Women's Affairs was created to ensure achieving equality between Lebanese men and women, in their cultural, social, political, economic, civil rights. However, the Ministry's mandate of authority, as well as its financial resources, remained limited. In January 2019, this Ministry was changed into the Ministry of State for Economic Empowerment of Women and Youth and was cancelled in 2021 with the formation on 10 September 2021 of the current caretaker cabinet in which women represent only 4% with one female minister out of 24.
This government has prioritized addressing the financial crisis and the decrease in purchasing power, which coincided with the COVID-19 pandemic and consecutive general and partial lockdowns. As a result, gender considerations, especially women's participation in political life, have been overshadowed by immediate concerns as food security and survival take precedence for citizens, affecting both men and women alike. In the absence of any Temporary Special Measure, especially a reserved-seat gender quota, and under the current electoral law, women face hardship and a high ceiling to succeed in winning seats. Additionally,

limited access to resources such as funding and training may hinder women from fully participating in the political process. Societal biases and stereotypes portraying women as less capable than men in political leadership roles can influence voters' perceptions and support for women candidates. Furthermore, the limited media coverage of women candidates and their campaigns makes it difficult for them to gain visibility and build support. [147] Specifically, this lack of media coverage also indicates a lack of information about the effective involvement of women members of municipal councils in programs and initiatives related to forestry, wildfires, or awareness raising.
In the most recent parliamentary elections of 2022, there were a total of 3,965,071 registered voters, comprising 2,022,387 women (51%) and 1,945,120 men (49%). Out of the 103 registered lists, there were 719 candidates, including 601 men and 118 women, marking an increase in women candidates from 68 in 2018. These parliamentarian elections witnessed the accession of 8 women out of 128 to the parliament seats.
Women are also underrepresented in local governments. The most recent municipal elections occurred in 2016. Since 2022, elections have been consistently postponed, and parliament has convened once to extend the mandates of municipalities and *Mukhtars* (local administrators). The informally communicated rationale behind these repeated extensions is to prevent Lebanon's local institutions from operating in a legal void. In the 2016 elections, only 1,519 women ran as municipal candidates out of a total of 21,932 candidacies. Out of a total of 12,139 elected officials, only 663 were women, representing less than 5.4% of the total, though an increase from 536 in 2010. In the Project's target areas, there were 45 elected women in Shouf, 12 in Rashaya, and 15 in West Beqaa. Additionally, there were 57 female *mukhtars* elected out of a total of 2,896, as opposed to 39 in 2010.[148]

4.2.6. Sexual and reproductive health and rights

Due to the omnipresence of the patriarchal and sectarian system in Lebanon, SRHR remains a taboo topic. Primary caretakers and educational institutions do not teach the youth essential information related to their sexuality and reproductive system, merely reducing SRHR to women's role of bearing children.

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[147] Shifting Narratives: Women's Political Participation and Economic Empowerment. Milestone 1 Upcoming Municipal Elections in Lebanon and Women's Political Participation. Outcome Document #1 March 20th, 2023. Shifting-Narratives_OutcomeDocument.pdf (asfariinstitute.org)
[148] Women in Municipal Elections 2016 | United Nations Development Programme (undp.org).

The Ministry of Public Health and the United Nations Population Fund (UNFPA) have been collaborating since 1998 to cater to the population's SRHR needs. The provided services range from screening for reproductive system diseases to appropriately dealing with rape cases for men and women alike. Moreover, pregnant women are offered a limited number of echography and visits, vaccination for new-borns, essential reproductive health medications, etc. at affordable costs at public health centres around the country. Nonetheless, an important reproductive health service that the government does not provide is abortion. The Lebanese law criminalizes abortion unless the pregnancy is killing the bearing woman. This law oppresses women by limiting their access to SRHR.

Following the Covid 19 pandemic and the economic crisis faced by Lemon, the provision of services by the MoPH were negatively affected. The MoPH has initiated the Vital Dye Observatory (VDO) in 2016 with the intention to monitor and assess maternal and child health data for people of all nationalities in Lebanon. The most recent VDO shows that live births in 2021 have decreased by 6.7% in comparison to 2020 while maternal deaths have spiked by 150%. No data is found concerning other aspects of SRHR besides pregnancy and childbirth such as comparable rates for STIs, cancer in the reproductive system, and abortion.
The deteriorating economic situation in the country has meant that a high percentage of women and girls are unable to afford to buy menstrual pads and resort to unsanitary, and potentially dangerous methods of coping with their periods. According to the COVID-19 rapid needs assessment carried out in April 2020[149], 66 percent of the girls living in Lebanon cannot afford to buy sanitary pads and other related products. The problem is exacerbated by a fear of stigma from speaking out and demanding the needs and rights of girls and women, as the topic is still considered taboo

4.2.7. Violence against women and girls

Gender-based violence is a societal problem that is widely present in Lebanon. In 2021, 1396 cases of violence against women took place (KAFA, 2021). However, this is merely the number of women who have spoken up about the issue, as many others still endure the violence silently.
According to the 2023 GBVIMS (Gender-based Violence Information Management System) Midyear report[150]., in the first part of 2023, physical assault and psychological/emotional abuse were the most reported types of GBV, accounting for 29 percent and 27 percent of all reported incidents, respectively. Forced marriage present the third most reported type of GBV incident with 21 percent of all incidents reported, followed by Incidents of sexual violence, including rape and sexual assault with 17 percent and denial of resources and opportunities with 6 percent of the incidents. Women and girls continue to be disproportionately exposed to different types of GBV, including physical, emotional and sexual assault at home and in the community.
The 2022 GBVIMS annual report for Lebanon indicated that 95% of GBV survivors were female, with children accounting for 17% of reported incidents. The main nationalities involved in GBV incidents were displaced Syrians (74%), followed by Lebanese nationals (23%) and other nationalities (3%).
Several laws have been enacted and as such some progress has been made in terms of protecting women from gender-based violence, however there are still many changes and additions that need to be done to ensure the protection of women.

4.2.7.1. Domestic Violence

In 2014 Lebanon passed the Law 293 on the Protection of Women and Family Members from Domestic Violence. The law is divided into parts on punitive measures and protection measures, and it states that if there is a conflict between the content of this law and the personal status law, the latter takes precedence. This stipulation leaves the final judgment and enforcement of the law in the hands of judges in religious courts who have wide discretion over its interpretation and what constitutes domestic violence.
While the law covers some protection concerns for women and related policing and court reforms, including provisions for protection orders, it left women at risk of marital rape and other forms of abuse[151] (ICJ, 2019). In December 2020, the parliament amended the domestic violence law to expand its scope to include violence related to—but not necessarily committed during—marriage, enabling women to seek protection from their ex-husbands. But it still does not criminalize marital rape.
Several judgments from courts applying Law No. 293 have supported a broad interpretation of the definition of acts of violence to include verbal and emotional violence. However, the definition applied by courts varies according to the judge. The Law requires a special unit on domestic violence to be established within the Directorate General of the Internal Security Forces to examine complaints, but this unit has yet to be established.
Police stations and judicial units receive regular training to provide counselling services to survivors of domestic

[149] Plan International, 2020

[150] The Gender-based Violence Information Management system (GBVIMS) consists of 16 GBVIMS user organizations in Lebanon: ABAAD, AND, CL, CW, DRC, IMC, INTERSOS, IRC, KAFA, LECORVAW, RDFL, MF, TDH-L, URDA, AMEL and Najdeh

[151] International Commission of Jurists, GBV in Lebanon: inadequate framework, ineffective remedies.

violence. Service Order No. 164/204 was issued by the Directorate General in 2013 concerning measures that should be taken by different groups and at different sites for dealing with women at risk of violence.
In 2021, a total of 18 women lost their lives to domestic violence, and at least 1396 new cases of gender- based violence took place[152].
Security and law enforcement services continue to constitute the highest percentage of most declined referrals by GBV survivors, accounting to 37 percent in 2023. According to field reports, survivors of GBV often refrain from accessing security or police stations to file protection complaints due to the fear of stigmatization, lack of trust and risks of persecution or being arrested for different reasons like the lack of legal status, and the fear of being deported along with their families to Syria; survivors lack of trust in the security and law enforcement systems is affecting their access to the services despite of the high need.

4.2.7.2. Sexual Harassment

In December 2020, Lebanon's Parliament passed Law 205, a landmark law criminalizing sexual harassment that represents a critical first step in expanding access to justice for survivors of sexual and gender-based violence. The law additionally affords protection to both the victims and any witnesses who testify against the accused. This law addressed sexual harassment solely as a crime and neglected to complement it with labour law reforms, monitoring, and civil remedies. This law also excluded migrant domestic workers isolated in private homes and tied to their employers through the Kafala (sponsorship) system, as well as Syrian and Palestinian refugee women who either lack legal residency or who do not have the required work permits.

4.2.7.3. Penal Code

Article 562 of the Lebanese Penal Code stipulated an exemption from punishment in what is known as "honour crimes." Which are committed by male figures, such as husbands, fathers, brothers against female kin, such as a sister, mother, or wife who engages in an act of adultery or unlawful intercourse. Such crimes can also be committed against the male partner with whom said intercourse occurred. In both cases, the male perpetrators were exempted for committing these crimes. This Article was seen as a contradiction of Lebanon's ratification of the International Declaration of Human Rights and it was ultimately amended in 1999 to allow for a reduced penalty.
Article 522 of Lebanese Penal code allowed men, who had been convicted of sexual assault, abduction, or statutory rape against a woman, to avoid penalty of no less than five years of hard labor if a valid contract of marriage could be provided. This Article was abolished in 2017.

4.2.7.4. Clinical Management of Rape (CMR) Protocols

Prior to 2012, medical care for survivors of sexual violence and intimate partner violence (IPV) was not included as part of the services provided within the various public and private protocols and health care workers were not regularly trained on CMR and IPV care. In 2013, to address existing gaps, the CMR Taskforce (CMR TF) was established with the Ministry of Public Health (MoPH) and UNFPA to coordinate and advocate efforts at the national level for increased access to quality and "empathetic" medical response for adult and child survivors in selected health facilities.[153].
Before the economic crisis in Lebanon, medical personnel were trained on clinical management of rape procedures and protocols, with nurses and midwives also trained on referral pathways, GBV concepts and issues related to early marriage to support prevention as well as response to GBV. In addition to medical staff, training on GBV was also conducted across health centres to ensure survivors are treated appropriately by all staff.
The GBVIMS shows that 43 percent of the incidents are reported after one month of the incident date. Considering the importance of timely reporting of GBV incidents especially incidents of sexual violence, there should be increasing efforts to enhance timely reporting and ensure timely access to health services including clinical management of rape. 14 percent of all recorded survivors of GBV have received health and medical services, including clinical management of rape services. Field reports indicate that, due to the decreasing funding, there is an increasing need to cover the fees of forensic doctors, especially in the cases of IPV, including physical and sexual assaults.

4.2.8. Women and work

Around a fourth of women participate in the work force in Lebanon. While the share of women in Lebanon's labour force exceeds the MENA average of 22 percent, it is still much lower than the share of men in Lebanon (26 vs 76 percent, respectively). Unemployment rates are also twice as high for women (10 percent) compared to men (5 percent). Only 17 percent of women are self-employed compared to 43 percent of men, and only four percent of companies in Lebanon has a woman as top manager.
According to the ILO, about 75.9 percent of jobs in Lebanon are found in the service sector, 20.5 percent in industry, and 3.6 percent in agriculture. The shares of women and men vary in Lebanon according to economic activity. In agriculture, women make up 13.3 percent compared to 86.7 percent of men. From another perspective (percentage by gender), 91.8 percent of women work in services, 6.7 percent in industry, and less than 2 percent in agriculture. Similarly, most men (68.9 percent) work in services, but only 26.6 percent in industry and 4.4 percent in agriculture.

[152] Gender-Based Violence in Lebanon: An Analysis of the Unfair Laws, Rayan Al Chami, LAU, December 2022
[153] UNICEF, UNFPA and MoPH, 2020

The changing structure of employment matched almost exactly the changing structure of production in the overall economy. According to the national accounts of Lebanon, the services and banking sectors accounted for 81.2 percent of the GDP, the industrial sector 15.7 percent, and agriculture 3.1 percent in 2017. Trends between 2007 and 2017 show a decrease in agriculture (-2.2 percent) and industry (-2.0 percent) in favour of the service sector15.[154]
Despite some legal reforms in the field of employment, women remain disadvantaged in the labour market, which is characterized by strong occupational segregation and the persistence of a gender wage gap. Although the number of Lebanese women graduating from universities is higher than the number of men, their economic activity remains low; this was only worsened by the economic crisis that has plagued the country since 2019. A labour force study conducted by the Central Administration of Statistics in conjunction with ILO[155] indicated that only 29.3 percent of Lebanese women are employed and that the share of women in managerial positions was about 26.7 percent in 2022, witnessing a drop of about 2 percentage points from the findings of the LFHLCS[156].
63 percent of women work in the service industry, which includes banking, education, health, tourism, trade, and social work. Women also have an easier time finding positions in the public sector; for example, almost 70 percent of teachers in Lebanon's public schools are women. Approximately 31 percent of informal workers are women including those working in the agricultural and service sectors as well as those working in family enterprises. Lebanese women's participation in entrepreneurship is only 16 percent, because women are more likely to be employed than self-employed.
The participation of women with disabilities in the workforce remains limited despite the enactment of disability legislation in 2020, which advocates for an employment quota for individuals with disabilities. However, this legislation does not specify a quota specifically for women. Various sources attribute the low employment rates of women with disabilities to societal stigma and familial reluctance to allow their disabled family members to engage in work publicly, regardless of whether they reside in urban or rural areas, with this phenomenon potentially being more pronounced in rural settings. Several NGOs are dedicated to promoting the employment inclusion of individuals with disabilities, including both men and women. Led by a woman with physical disabilities, the Lebanese Union for People with Physical Disabilities (LUPD) has undertaken various initiatives aimed at fostering inclusive employment practices, such as providing vocational training and implementing measures to facilitate the employment of people with disabilities within the tourism sector. The review of online sources suggests that individuals with disabilities are not reported as being employed in any protected area or nature reserve, regardless of gender.[157]
In Lebanon, there are a small percentage of women who are knowledgeable of the use of social media tools in depth. The percentage of women user who are effectively active in the blogosphere and micro- blogosphere like twitter, Facebook, Instagram, etc is much less than that of men. Women in Lebanon still do not have enough knowledge of the in-depth use of the social media tools. This fact makes them fall behind in the era of prevailing social media in their role of being online active citizens and widens the technological gender gap between them and men. Social media tools are a space for women to advocate for their causes, speak up to the public, have a saying in public policies, and empower themselves to be active citizens.

4.2.8.1. Labour Law

The Labour Law of 1946 protects and guarantees labourers' rights regardless of gender. Nevertheless, a vast segment of informal workers, such as domestic workers and women and men working in the agricultural sector, are not covered by the law. The mandatory retirement age, set at 64 years old, applies equally to both male and female workers (Article 55). In addition to this, this Law contains various discriminatory aspects, such as prohibiting women from working in certain professions deemed arduous or hazardous such as working in mining, factories, energy, transportation, and agriculture. Although a draft law aiming to amend these sector restrictions, confining them solely to pregnant women, has been proposed to Parliament, no amendments have been ratified yet.
Article 26 of the Labour Law was amended in 2000, it prohibits discrimination against women in the type of work and amount of wage or salary; however, there are no clear mechanisms in place to uphold women's rights in terms of wages, promotion and competence in either the public or private sectors.
While women are entitled to a 7-week maternity leave with full pay (Article 39), they do not receive the minimum of 14 weeks of paid leave as stipulated in Article 28. However, the law safeguards them from dismissal or notice during the pregnancy and delivery period (Article 52). Although the Code lacks provisions for nursing breaks or accommodations for breastfeeding mothers, certain employers provide such amenities as a customary practice.

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[154] Labour Force and Household Living Conditions Survey 2018-2019 Lebanon, http://www.cas.gov.lb/images/Publications/Labour%20Force%20and%20Household%20Living%20Conditions%20Survey%202018- 2019.pdf

[155] Lebanon follow-up Labour Force Survey January 202, CAS-ILO

[156] Labour Force and Household Living Conditions Survey), 2018- 201

[157] According to the WFP Disability Inclusion Survey Results Introduction (May 2023), approximately 10% to 15% of the Lebanese population has disabilities. WFP surveyed 1,081 individuals with disabilities in November-December 2022, with 56% male and 44% female, mostly aged 18-64. Findings showed high unemployment rates, with 82% of participants jobless. 85% reported multiple difficulties, more common among females. 30% of households had multiple disabled members, with crisis-level coping strategies like selling assets. 16% used emergency-level strategies such as begging or illegal activities, more prevalent in households with disabled members. Female respondents, especially those with intellectual disabilities, faced high risks of gender-based violence. This issue remains underreported, with limited specialized support services available. Monthly Market Bulletin (wfp.org)

Finally, the Code lacks preventive mechanisms to effectively enforce equitable measures against women in the workplace.

4.2.8.2. Social Security

Social security and protection measures such as parental leave and welfare payments are either non- existent or incompatible with international conventions and frameworks. Article 3 of the Labour Law and Article 46 of the Social Security Law provide welfare benefits for men that do not apply to women. For example, male employees can receive compensation for working wives while female employees can only do so if their husbands are deceased or suffer from an illness that does not allow them to work. Regardless of the gender of the employee, compensation is provided for each child. Article 10 of the Benefits and Services Regulations of the State Employees Cooperative and Article 14 of the Social Security Law discriminate against women in relation to their spouses in access to health care and other social benefits. Furthermore, the Labour Law does not formally recognize workers in the informal sector as such these end up having limited or no social protections, including social security contributions.

In December 2023, the Parliament of Lebanon approved a significant reform through the passage of Law 319. The new legislation brings about substantial change to the social security system, introducing a new pension scheme for private sector workers and fundamentally reshapes the governance of the National Social Security Fund (NSSF). Passing of this law was supported by the efforts of the International Labour Organization (ILO) that provided extensive technical support to the relevant parliamentary committees, the NSSF and workers and employers' organizations in Lebanon to reach consensus over the design and parameters of the scheme, and the final text of the legislation that was adopted by Parliament, ensuring its alignment with international labour standards for social security.

4.2.8.3. Code of Commerce

The 1942 Lebanese Code of Commerce was amended in 2019 under Law No. 126/2019 to allow married women the full capacity to do business (article 11) and to conduct the necessary business for a commercial project without interference from their husbands (article 12). Nevertheless, the overreliance on religious courts and their dominance over legislative matters extends to the Code of Commerce, preventing progress. For instance, article 14 states that the rights of a married woman may be limited, when necessary, by the rules of her status or by those of her matrimonial regime.

4.2.9. Time Management

Caregiving is primarily viewed as the responsibility of women and is highly prioritized over their engagement in productive labour markets. On average, Lebanese women dedicate around 60 hours per week to unpaid household activities such as childcare, cooking, and cleaning. Care work is deeply ingrained in prevalent gender norms. This perception significantly influences women's job choices and presents a major barrier to achieving work-life balance. [158]

4.2.10. Land and Property

In Lebanon, the right to own land is theoretically protected without discrimination for both women and men by the Lebanese Constitution. Although the Lebanese law does not discriminate with regard to acquiring productive resources, women in general do not buy land owing to social norms. Land ownership is predominantly exclusive to men, while rural women remain relegated to farming small or remote plots of fragmented land. Women's access to other productive resources (credit, technology, services etc.) is also limited, and trainings, extension services and technological innovations do not usually target the needs of women, who are seldom encouraged to participate in such activities (FAO, 2021).

The situation is complicated when it comes to inheritance which is ruled by the various Inheritance laws differing between religious communities and between individuals of different sects within the same community. This disparity in inheritance rights has resulted in compromising women's housing, land and property (HLP) rights, and not guaranteeing them equality both in terms of the right to inherit and the share of inheritance. Although women have legal access to inherited lands in some religious denominations, they often cede their share to their male relatives, particularly brothers, because social norms dictate that land shall be held by men.

While some family practices have diverged from the discriminatory laws and have applied, for example, the equal division of inheritance between sons and daughters, other discriminatory customs and family traditions, which prioritize males in inheritance practices, have negatively affected women's HLP rights.

Protecting and enhancing women's HLP rights in Lebanon requires raising women's understanding of their HLP rights so they are better able the claim these rights, raising their awareness on how to overcome challenges in accessing theses rights, in addition to amending discriminatory laws and reform policies that hinder their access to HLP rights.

UN Habitat and the Global Land Tool Network (GLTN) in partnership with the Stand for Her Land Campaign launched in 2022 a Campaign for Women and Land Rights. This campaign seeks to address discriminatory laws, reform policies, and enhance women's understanding of their HLP rights.

[158] Women's economic participation in Lebanon: A mapping analysis of laws and regulations (unescwa.org)

4.2.11. Agriculture and the rural sector

As of 2021, only 13 percent of agricultural land in Lebanon was owned by women. While farming accounts for about 5 percent of Lebanon's economy, agricultural land in the Bekaa Valley constitutes 49 percent of the country's agrarian land[159].

In Lebanon, women in rural areas make up 43 percent of the agricultural workforce. In 2010, only 9 percent of farms were headed and managed by women and only 5 percent of the total agricultural area was cultivated by women. Women represent only 7 percent of the agriculture land holders taking decisions over resources and managing agricultural holdings [160]. A woman farmer works to help her family with the increasing cost of living. This profession, with all its hardship, is regarded as an extension of the many duties' women must perform. This belief is due to inherited ideas that agriculture is a part of house chores. In rural communities, land ownership determines social status and how control over family resources and income is exercised. The economic deprivation of women results in their structural dependence on men in accessing resources, which can expose women to insecurity. Women do not own land, and when they inherit, their share is the smallest (based on the religious text of Muslims) and is often of lower quality and productivity, as the preference is for males according to social legacies, customs, and traditions. In addition, women are often ashamed to ask their brothers for their share of the inheritance and exchange it for a small amount of money that is not equal to the actual value of the property or land. Moreover, even if a woman owns a piece of land, the management often belongs to the man (husband or brother).

Gender gaps prevail when it comes to women's participation in rural legislation and rural areas program development as well as in agricultural wages, with women often earning two thirds to half of the wages of men[161] for the same work, hours and efforts. Women work 14 to 19 hours daily, including house chores and other family related workloads. Women spend about 5.2 times as many hours as men on unpaid house chores and care work. They handle many other tasks that are invisible and unacknowledged financially and socially. This situation exacerbates the problem of unpaid work among women and other challenges, such as the lack of social protection.

In March 2023, the MoA, in partnership with the FAO, launched a Farmer Registry with the primary aim of formalizing agricultural activities and extending social protection coverage to farmers. This initiative also seeks to enhance farmers' access to agricultural services. The registry includes a range of socio-economic indicators designed to identify farmers most in need of social protection, agricultural interventions, and disaster response.[162] According to MoA data up until February 2024, 42,556 farmers have been registered, including 9,745 women.

One of the most important recommendations of the national study on women in agriculture in Lebanon, prepared by the Food and Agriculture Organization of the United Nations (FAO) in 2020, is to develop legal policies and measures to address existing gender gaps, such as the wage gap, and to make changes to labour law and personal status laws to create an environment conducive to economic integration.

4.2.12. Energy

In Lebanon, renewable energy is the key to various potential solutions, aimed at overcoming some of the challenges the country faces. The gradual increase in reliance on renewable energy sources in Lebanon, as in other countries, would create new economic opportunities and improve livelihoods for the population, while mitigating the impacts of climate change. However, the impact of such a shift would differ across genders, and the different Government policies and actions adopted or planned may not have taken full consideration of the gender context in their development.

Through the National Energy Efficiency Action Plan (NEEAP) 2011-2015[163] and National Renewable Energy Action Plan (NREAP) 2021-2025, the Lebanese Government has been decisive in setting goals for the improvement of the country's energy efficiency and the growth of its renewable energy capacity[164]. It should also be noted that among the main goals of those action plans is that of providing employment opportunities for Lebanese workers of various backgrounds and levels of qualification. Despite considerable employment opportunities, women, have a very limited presence in the energy sector, and more specifically in the renewable energy sector, being mostly employed in administrative or customer service jobs. Lebanese women are playing almost no role in the renewable energy field, and very few of them are contributing to the design of PV installation systems.

In addition, rural women are still stuck in the same old agricultural jobs The situation of rural women could be improved in the coming years, by prioritizing the renewable energy sector in the Government's economic growth strategy, and

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[159] The Fight for Women's Inheritance Rights in Lebanon – Women's Media Center

[160] Women in the Agro-Food Sector in Lebanon A REVIEW OF THE LEGISLATIVE FRAMEWORK – UN Women-December 2023

[161] Lebanese Women in Agriculture FAO briefing note, https://www.fao.org/3/cb3268ar/cb3268ar.pdf

[162] Farmers' Registry– a key tool to expand coverage of social protection among farmers | Social Protection | Food and Agriculture Organization of the United Nations | Social Protection | Food and Agriculture Organization of the United Nations (fao.org)

[163] Approved by the Council of Ministers on 10 November 2011

[164] Clean energy technologies include solar PV, solar water heating, wind energy and bioenergy.

by raising awareness about the existence of various financing schemes. Rural women's participation and access to various financial and natural resources could thus be increased, either by exploring employment opportunities or by creating their own SMEs, in the renewable energy sector.
Women are generally represented as passive users and consumers of renewable energy, as such policymakers do not recognize the existence of gender needs in energy services. As a result, women's energy needs tend to be marginalized in policy documents, and energy planning tends to be gender blind as well[165].
In Lebanon, the focus on gender in the analysis, formulation and development of national policies is not adequately supported by gender statistics, and this represents a major obstacle to integrate the gender dimension in projects. Gender statistics are concerned with classifying, generating, publishing and analysing statistics to understand how gender issues affect both individuals and the society. Major gaps persist not only in gender-related issues, but also in terms of the linkage between renewable energy and gender in Lebanon, particularly in rural areas. Gender statistics on energy access are unavailable, whether at the policy or local level.

4.2.13. Climate change

Women and men are affected differently by climate change and are differently prepared to adapt to climate change. This is due to underlying inequality in socio-economic status, influenced by three factors: (i) The degree of equality of rights of women and men in national legislation; (ii) The degree of law enforcement;
(iii) The tradition and customs that define the role of men and women in society (so-called "gender roles"). Countries can successfully address climate change risks only if they recognize the different perspectives, impacts, and interests of women and men in sector-level policies relevant to climate change (e.g. energy, transport, agriculture, tourism and forestry).

Lebanon is among the countries least prepared to face climate change, ranking in the 161st position out of 192 countries globally in climate change readiness. At the root of this vulnerability is the country's limited adaptive capacity, which has been further exacerbated by the ongoing economic and financial crisis. The latter has severely weakened Lebanon's human, natural, and physical capital. It has also drastically compromised public finances, impeding the capacity to invest in mitigation measures and to prevent deterioration in public services in sectors like energy and solid waste and wastewater management thus accelerating environmental degradation.

Climate change in Lebanon will result in more frequent extreme weather events, these climate shocks are projected to affect Lebanon's GDP and fiscal balance, and to increase the debt-to-GDP ratio. Climate change is projected to decrease water availability by up to 9% by 2040 (up to 50% during the dry season) and induce significant losses in key recovery-driving sectors, particularly agriculture and tourism threatening the livelihoods of a large portion of the population. The status of women in the family, in the work force, in the economy and in political institutions increases their vulnerability to climate change. The inequalities that women face result in diminished economic, political and legal clout. This means women are less able to cope with and are more exposed to the adverse effects of a changing climate.

Women are on the forefront of resource management, responsible for domestic aspects of energy and waste management, and have a key role to play in Disaster Risk Reduction (DRR). Their central role in maintaining social relations within their family and community provides them with the opportunity to influence others, which importantly includes increasing awareness around behaviors and actions that contribute to climate change mitigation and adaptation. While all sectors that will be affected by climate change will have some impact on women, Lebanon has prioritized the energy, waste and water, sectors to undertake capacity building and gender mainstreaming to better support gender-sensitive climate action. The selection of these three sectors was based on five components:

1. Impact: importance that gender relations play in the related sector and level of impact that the integration 1- of gender can have on gender relations.
2. Status: current status of the sector regarding gender inclusion.
3. Opportunity: current opportunity to integrate gender including updating of strategies, policies or new institutional mechanisms.
4. Human Resource: existing human resources with capacity to integrate gender in policies;
5. External support: existing financial support already provided to include gender.

Regarding energy, it plays a key role for household needs, education, health care, access to clean water and other services. Since women are often responsible for domestic work that requires energy and act as primary household-energy managers, as such energy has a direct impact on their lives. Both men and women have a critical role to play in the success of energy related measures.
Gender roles are often clearly defined when it comes to solid waste management. Women are responsible for

[165] ENERGIA International Network on Gender and Sustainable Energy

domestic tasks such as gathering the waste, while men will collect and dispose of it. As both men and women are involved in solid waste management, both need to be part of the solutions the sector seeks. For instance, if women are involved in waste management at the household level, increasing their participation in recycling and designing capacity-building activities can provide opportunities for source reduction as well as increasing re-use and sorting-at-source.

Women are often the main water resource manager at home because of their responsibilities in food production and preparation, hygiene, cleaning, washing, waste disposal and care of children and the elderly. As such, women should be directly involved in decisions regarding water to increase efficiency of water distribution and improve water management by understanding behaviours and practices around water usage.

Climate change has a strong impact on rural communities which are essentially involved in agriculture. These communities are in the front lines in the battle to improve food security. At the same time, these communities must also cope with changing climate conditions. Gender is one critical dimension of this diversity. It shapes men's and women's roles and opportunities, and consequently determines their access to the resources and processes needed for dealing with climate change. Accurate climate information and the ability to interpret it allows farmers to plan and make better decisions on how to adapt to climate change. Women usually have lower access to production inputs, resources, and information. This what makes women more vulnerable in time of climate change. The report entitled "How to put Gender-responsive Climate Solutions into Action. Lebanon's Approach "(MoE/UNDP, 2020) [166] underscores the importance of integrating gender-responsive approaches into Lebanon's climate change policies, particularly focusing on Lebanon's Nationally Determined Contributions (NDC). Key findings highlight significant gender disparities, including those rooted in laws and cultural and social beliefs. It also emphasizes the lack of gender mainstreaming in policies and the challenges caused by insufficient data for identifying concrete actions to mainstream gender into climate change initiatives. The prioritization exercise conducted identified sectors requiring further capacity-building efforts to focus actions effectively. The results revealed notable disparities in the mitigation and adaptation policies across sectors. While the agriculture and forestry sectors show the highest level of gender integration in their strategies, largely attributed to support from international actors or NGOs advocating for gender-inclusive public action, other sectors such as biodiversity, energy, transport, tourism, and water are characterized as "gender-blind".

Lebanon's approach, as delineated in the report, follows a systematic procedure, including conducting gender analysis, identifying sectoral priorities, developing SOPs, appointing gender focal points, and integrating gender considerations into climate-related initiatives and policies. Recommendations encompass mainstreaming gender across all climate-related documents, strengthening institutions with a gender focus, enhancing the capacities of women, improving data collection practices, and promoting coordination among stakeholders.

Table 9 - Differentiated climate change impacts on men and women

Sector / Livelihood relevant to the project	Climate change impact	Gender & youth equality and empowerment issues, incl. specific vulnerabilities / barriers to adapt	Capacity to adapt and opportunities for promoting women and youth as agents of change
Agriculture	- Reduction in crop yields - Decline in water availability	- High unemployment rates among youth especially for women. - Women working mostly in the informal sector. - Women dropping out of school and traditionally carry the burden of household work in addition to farm work limited access to nutritious food. - Women have much less access to inputs, knowledge, and assets especially land ownership. - Exclusion of women and youth voices in planning and	- Participatory approach focusing on women and youth to develop climate vulnerability assessments and climate resilience strategy for the sector, including specific impacts and needs identified. - Capacity building to focus on women and youth to provide them with access to the knowledge needed for them to engage in adaptive agricultural practices, crop diversification, climate smart farming, better livestock and bee management, energy diversification and water management, - Focus on climate resilience projects to prioritize water management strategies, such as rainwater harvesting, watershed protection, water-use efficiency measures, and the
Livestock	- Decline in water availability for livestock		
Bees	- Loss of canopy - Difficulty for bees to find plants for food, leading to the loss of bee populations.		
Water	- Decrease in precipitation. - Over exploitation of underground water resources - Pollution of water resources		

[166] viewfile.aspx (MoE.gov.lb)

Waste	- Increase in GHG - Increase in air pollution, water and soil contamination	decision making leading to their needs in the agriculture sector being overlooked. - Youth in rural areas being more vulnerable to joining extremist and violent groups	development of resilient water infrastructure. - Provide inputs in the form of grants for young and female farmers and pastoralists to increase their incomes and help them adapt to climate change. - Address policy issues that systematically exclude women and youth through institutional capacity building.
Health	- Increase in the incidence of heat-related illnesses, vector-borne diseases, waterborne diseases, and respiratory ailments.		
			- Enhance the role of women led organizations and associations.

4.3. Policy and institutional framework

The Lebanese Constitution of 1926 in its Article 7 states that all Lebanese are equal before the law and equally enjoy civil and political rights. However, there is no specific reference to sex or gender equality whereby the Constitution does not prohibit discrimination on the basis of sex or gender nor does it make reference to gender equality. Despite the equality offered in article 7, article 9 of the Constitution states that religious communities have the right to apply their laws, especially in matters related to personal status. This opens the door for discrimination against women and girls, as well as women from different religious denominations. This article is considered one of the main obstacles to legal reform, particularly regarding the status and role of women in society[167].

The Lebanese state has never approved a civil personal status law, leaving the task of managing personal affairs, including marriage, divorce, alimony, custody, and inheritance to the religious courts of 15 officially recognized sects. Under this system, women do not enjoy the same rights as men of the same sect, and there are discrepancies in women's rights between the sects. The distinction between sects is enshrined in Article 9 of the Lebanese constitution, which "guarantees that the personal status and religious interests of the population, to whatever religious sect they belong, shall be respected." Its legal systems and decisions discriminate against women of all sects in access to divorce and custody of their children.

Lebanon has ratified several important international agreements highlighting the importance of gender equality as indicated in ***Table 10***.

Table 10- International conventions ratified by Lebanon.

Convention	Year of Ratification
• The Universal Declaration of Human Rights	1948
• The International Convention on the Political Rights of Women	1956
• The Convention against Discrimination in Education	1964
• The International Covenant on Economic, Social and Cultural Rights	1972
• The International Covenant on Civil and Political Rights	1972
• The International Convention concerning Equal Remuneration for Men and Women Workers for Work of Equal Value	1977
• The International Convention concerning Discrimination with Respect to Employment and Occupation	1977
• The Convention on the Elimination of All Forms of Discrimination against Women (CEDAW)	1997
• The Convention on the Rights of the Child (CRC)	1991

Regarding CEDAW, Lebanon acceded to it in 1997 and made a reservation on article 9 (2) (equal rights with respect to passing on the nationality to the children); article 16(1)(c), (d), (f), and (g) (equality in marriage and family relations), and article 29(1) (administration of the Convention and arbitration in the event of a dispute). Lebanon has not ratified the CEDAW Optional Protocol, which means that citizens cannot access the mechanism for international adjudication of complaints lodged against Lebanon under CEDAW.

The National Commission for Lebanese Women (NCLW) is an official institution affiliated to the Presidency of the Council of Ministers established by Law 720/1998 to promote women and girls' rights in Lebanon as well as gender

[167] ESCWA, UNDP, UNFPA and UN-Women. (2018). Lebanon: Gender Justice and the Law – Assessment of Laws Affecting Gender Equality and Protection against Gender-based Violence

mainstreaming in legislations and policies. In the absence of a Ministry dedicated for women affairs [168] , NCLW represents today the official body responsible for overseeing all national tasks and initiatives related to women's issues. Its mandates include advising the government on women's matters, facilitating coordination among relevant ministries, public institutions, and CSOs, and fostering connections with regional and international entities while monitoring gender relevant issues.
In 2023, the NCLW launched its multiyear strategy "the National Strategy for Women in Lebanon" (2022- 2030). This strategy aims to align with the 2030 Agenda for Sustainable Development and responds to the

Lebanese government's adoption of a National Plan in September 2019 to implement Security Council Resolution 1325 on Women, Peace, and Security. Furthermore, the Strategy follows the issuance of concluding remarks by the CEDAW Committee after its review of Lebanon's sixth official report on CEDAW provisions implementation.
The new Strategy (2022-2030) includes five main objectives namely:

- ✓ Objective 1: Violence against women and girls is socially rejected and legally prohibited, and protection and assistance to survivors are available in terms of security, judicial interventions, as well as materially and psychologically, while psychological rehabilitation is available to the perpetrators.
- ✓ Objective 2: Women are capable and empowered on personal, educational, economic, and social levels.
- ✓ Objective 3: Women occupy leadership positions in political, administrative, economic, security, and defence institutions, and participate in drawing up development reforms and implementing them at the national and local levels.
- ✓ Objective 4: The principle of equality between women and men is established by laws, legislations, policies, and administrations, and is in force in the security, judicial, and administrative agencies. Its implementation is monitored by specialized agencies and mechanisms.
- ✓ Objective 5: The prevailing culture is based on the principles of human rights for men and women, while the means and outlets for its dissemination are aware of their responsibilities.

This strategy has a notable focus on social protection and economic empowerment and though it mentions the participation and contribution to environment safeguards, it lacks any reference to the environmental sector, and how influencing gender dynamics can enhance the resilience of women with regards to the challenges linked to Climate change. This issue highlights the importance of engaging in regular consultations with and integrating NCLW into the different activities to enhance gender mainstreaming with a focus on environment concerns as well as on pushing for the adoption and development of gender desegregated data linked to all sectors affecting the environment including the contribution of women to these sectors.

These efforts could be linked to the work of the Lebanon National Gender Observatory (LNGO) which was established in 2018 with the objective of providing knowledge and analyses in the field of gender equality and women´s rights in Lebanon, to respond to the need of policy makers, help addressing effectively challenges and improve the situation of women on the ground. The Observatory which is hosted by NCLW developed and Action Plan (2022-2023) that included indicators related to three strategic objectives (i) Support gender equality policy making through producing and generating information and knowledge and delivering high-level expertise, (ii) Support in enhancing gender mainstreaming in current and future national laws, policies, and strategies and (iii) Raise awareness of gender equality and contribute to combating all forms of gender-based discrimination. In addition to the work on indicators, the LNGO published several studies however environmental issues have not yet been addressed in any of the conducted studies.[169]

4.4. Gender mainstreaming in sectoral national policies, strategies, plans and reports

✓ Few of the Ministry of Environment (MoE) policies, strategies, and legal frameworks focusing on biodiversity, forests, wildfires, and other areas relevant to the Project have referred in a way or another to consider gender mainstreaming or gender inclusion. However, there is a growing focus on integrating gender into policies and plans. When implementing and monitoring the Project activities, it is crucial to consider the guidelines and SOPs developed by MoE, making effective use of them throughout the process.

✓ The *Lebanon State of the Environment and Future Outlook report (SOER, 2020)*[170] identifies instances where gender equality, mainstreaming, and inclusion are mentioned within environmental laws, SOPs, and plans. However, it does not have a dedicated chapter specifically addressing gender. SOER underscores the significance of incorporating gender-responsive national policies and instruments to

ensure active and equal participation of both women and men in consultation and decision-making processes related to natural resource management, greenhouse gas (GHG) emissions control, and the formulation of

[168] A Ministry for Women's Affairs was established twice during 2016 and 2019 cabinet terms, but cancelled during the mandate of the current caretaker cabinet
[169] Home Page - LNGO (nclw.gov.lb)
[170] Lebanon State of the Environment and Future Outlook: Turning the Crises into Opportunities | United Nations Development Programme (undp.org)

mitigation and adaptation strategies.

✓ The vision of *Lebanon's National Biodiversity and Action Plan (NBSAP) 2016-2030* challenges Lebanon to take appropriate measures to halt biodiversity decline, with thirteen Priority Areas delineating these measures. [171] The Action Plan to achieve this vision includes 18 National Targets and 91 corresponding National Actions, each with identified indicators. The NBSAP report did not incorporate gender-inclusive language nor emphasize the importance of gender mainstreaming for achievement. Additionally, none of the indicators were gender inclusive. [172]

✓ Lebanon's Nationally Determined Contributions (NDC) sets a clear path towards sustainable forest management while recognizing the critical intersections of gender inclusivity and carbon neutrality. As a foundational step towards implementing *Lebanon's Low Emission Development Strategy (LEDS)* objectives by 2050, [173] Lebanon emphasizes a just transition, prioritizing socio-economic considerations for vulnerable groups and adopting a gender-responsive approach. Recognizing the disproportionate impact of climatic events on vulnerable groups, especially women, Lebanon commits in this report to rendering climate adaptation actions gender-responsive within forest management practices. Lebanon anticipates diverse implications of climate change, including threats to biodiversity, ecosystems, and natural habitats. Leveraging international support in finance, technology transfer, capacity-building, and technical assistance, Lebanon aims to enhance its forestry sector's adaptive capacity and resilience while promoting sustainable forest management practices that prioritize gender equity and carbon neutrality. Guiding adaptation principles within forestry and wildfire initiatives include achieving sustainable resource use, restoring degraded landscapes, and increasing forest cover, all while integrating gender-responsive and carbon-conscious approaches.

✓ The SOPs to integrate gender in climate reporting and planning[174] aims at integrating gender into climate reporting and planning tools under the UNFCCC, including the NDC, LEDS, Nationally Appropriate Mitigation Actions (NAMA), National Communications, and Biennale Update Reports. Its objectives are to provide step-by-step guidance for integrating gender into climate planning and reporting, including data collection. They include general considerations about gender and climate change, an overview of the gender integration process, and practical guidance for planning and reporting, along with concrete examples. Women's vulnerability to climate change, including impacts on health, livelihoods, and migration, is underscored, along with barriers to women's participation in decision-making and adaptation efforts. The SOPs suggest integrating gender into climate planning by understanding gender roles, discriminations, and vulnerabilities, analysing the situation, actively involving women, building their capacity, and setting up indicators to track progress. It emphasizes the responsibility of all stakeholders to ensure gender integration and recommends the involvement of gender focal points and partnerships with academic institutions for data collection and analysis.

✓ The Lebanon National Agriculture Strategy (NAS) 2020–2025 of the Ministry of Agriculture (MoA) places a strong emphasis on gender sensitivity throughout its structure.[175] From its definition section to its core principles, the strategy highlights gender equality, particularly through the principle of "gender sensitiveness and people orientation". Learning from the previous MoA strategy (2015-2019), NAS acknowledges the challenges faced by women and other vulnerable groups in accessing economic opportunities within the agriculture sector. Recognizing the importance of a people-centred approach, NAS prioritizes gender and inclusivity in its plan for transforming the agri-food sector, identifying the inclusion of women and youth as one of its eight key priorities. NAS recognizes that various obstacles

faced by the agri-food sector lead to adverse outcomes, including the socio-economic marginalization of vulnerable groups due to insufficient transformative capacities, barriers to entrepreneurship, and cultural influences.

NAS is composed of five key pillars.:

- Pillar 1 ensures that women's priorities and the needs of vulnerable groups are taken into account during planning and implementation stages, with the aim of enhancing livelihoods and food security by facilitating access to productive resources, particularly for households led by women.
- Pillar 2 focuses on expanding the production of agri-food products, employing a gender-sensitive approach that emphasizes the involvement of women in agricultural activities from production to marketing. Similarly,

[171] These are (1) Threatened Species, (2) Genetic Diversity, (3) Protected Areas, (4) Sustainable Management and use of Natural Ecosystems and Resources, (5) Ecosystem Restoration, (6) Access and Benefit Sharing, (7) Invasive Alien Species, (8) Communication, Education and Public Awareness, (9) Mainstreaming Biodiversity into National and Sub-National Policies and Plans, (10) Climate Change, (11) Research and Knowledge Transfer, (12) Institutional and Legal Framework, and (13) Resource Mobilization.

[172] leb163550.pdf (fao.org).

[173] Lebanon's Nationally Determined Contribution Updated 2020 Version. leb205977E.pdf (fao.org)

[174] MoE/UNDP (2019). Standard Operating Procedures (SOPs) to Integrate Gender in Climate Reporting and Planning. viewfile.aspx (MoE.gov.lb)

[175] NAS-web-Eng-7Sep2020.pdf (agriculture.gov.lb)

- Pillar 3 prioritizes the inclusion of women and youth in the agri-food industry, recognizing their potential for employment and self-employment, with digital technologies playing a crucial role.
- Pillar 4 focuses on adapting to and mitigating climate change.
- Pillar 5 guarantees the inclusion of vulnerable populations and creates opportunities for women and youth participation, promoting widespread adoption of a gender-sensitive and inclusive approach.

It is worth noting that gender inclusivity is not explicitly mentioned in Pillar 4, which focuses on adapting to and mitigating climate change. Highlighting gender inclusivity in this pillar, would be beneficial, particularly since interventions under Programme 4.2 aim to promote the sustainable use of natural resources. These interventions include fostering sustainable forest management, with potential opportunities for gender- inclusive practices in timber and wood production, the valorisation of non-timber forest products like aromatic and medicinal plants, sustainable rangeland management, protecting forests from pests and fires, and encouraging opportunities for agro- and eco-tourism.

Finally, the development of an Action Plan for implementing NAS 2020-2025 foresees key criteria including inclusivity, with a specific emphasis on maximizing social targeting and addressing the needs of target groups such as women, youth, and vulnerable farmers.

✓ The Lebanon National Forest Program (NFP, 2015-2025) has been established to act as a roadmap for Lebanon's forestry sector development, serving as an entry point for fostering collaboration on forest-related matters among national and international entities as well as donors, where they can pool efforts to restore, manage, and conserve Lebanese forests. The overarching objective of the Forest Management Plans (FMP) is to rehabilitate degraded lands and expand forest cover in Lebanon while addressing ecological, social, and economic needs for sustainable forest management at a regional level. In formulating the FMP, the Ministry of Agriculture followed a nine-step approach, which included a specific step "valuing the role of women".

The main actions outlined in the strategy[176] for the short term are focused on legal, financial (including mechanisms for financial support such as revenues and material incentives), technical, and administrative procedures. Specifically, the strategy points out the challenges related to forest fires, including the lack of recognition of the forest sector as a crucial area connected to the local economy and the insufficient awareness among local communities regarding forest management. It underscores the limited understanding among local communities of the economic, social, and environmental significance of forests, often focusing solely on timber products. The strategy also emphasizes the involvement of local communities in prevention, response, and post-fire activities. However, the identified procedures have the potential to address gender roles in their implementation, particularly regarding the roles and responsibilities of both men and women in forest protection. This includes addressing the involvement of private property owners, men and women, in residential areas and ensuring unbiased enforcement of penalties against arsonists, irrespective of gender. Moreover, the strategy stresses the importance of engaging municipalities and local communities in developing and implementing local plans for fire prevention and readiness. Based on the MoE feedback received, the strategy will be finalized through an Action Plan, as per the Decision of the Council of Ministers. Subsequently, the Action Plan is expected to consider the potential involvement of women in managing fire risks.

4.5. Projects dealing with the promotion of gender equality

✓ **The Mashreq Gender Facility (MGF)** facilitated by the World Bank provides technical assistance to Lebanon to enhance women's economic empowerment and opportunities as a catalyst towards more inclusive, sustainable, and peaceful societies, where economic growth benefits all. Through collaboration with the private sector, civil society organizations and development partners, the Facility supports government-led efforts, country-level priorities and strategic regional activities that:

- Strengthen the enabling environment for relevant stakeholders to effectively identify and address constraints to women's economic participation.
- Improve women's access to economic opportunities.

Activities of the 5-year Facility (2019-2024) are identified under three, interconnected, pillars:

- Dialogue and Participation: building capacity and awareness at all levels, convening stakeholders across sectors and segments.
- Data and Knowledge: gathering and producing country and regional data and analytics for evidence-based policies.
- Innovating for results: testing and assessing interventions to identify solutions and provide support to catalytic initiatives that boost women's economic opportunities.

[176] National Forest Fire Reduction Strategy in Lebanon (updated version 2022-2023) Supported by AFDC and developed in collaboration with MOE, MOA, DRM, Civil Defense and National Council for Scientific Research (NCRS)

✓ **The Women in Leadership project**: United Nations Development Programme (UNDP), UN Women, together with the Government of Canada, partnered with the Arab Institute for Women (AIW) at the Lebanese American University (LAU).

Women in Lebanon remain underrepresented in political and public life due to a range of structural barriers and cultural norms that foreground male elites and male-dominated kinship structures. Based on the 2016 municipal elections results, women represent only 5.4% of the total council members. In the 2022 parliamentary elections, only eight women reached parliament (6.3%), placing Lebanon at the bottom of the women's representation ranking worldwide. In this context, UNDP, UN Women, and the government of Canada partnered with LAU to encourage local communities to embrace gender equality and acknowledge the roles of women leaders in different fields.
Under the framework of this partnership, the project includes a series of activities dedicated to acknowledging women's unrecognized achievements in different fields, namely politics, literature, education, journalism, activism, science, engineering, and the arts, including a planned TEDx LAU Women's talk linked to the global annual TEDx Women event.

✓ The **Women Empowerment Hub WE-HUB:** funded by the EU and implemented by GIZ and Expertise France

The overall objective of the action, with a budget of EUR 6,000,000, is to promote the advancement and empowerment of women for effective realization of gender equality. The specific objectives of the project are:

- **SO1**. Increase women's leadership and participation in political and public sphere.
- **SO2**. Foster an enabling environment for better engagement of women in the workforce.
- **SO3**. Enhance key legislative reform and measures that protect women from all forms of violence.

5. Capacity gaps affecting Gender Policy compliance within the project implementation.

Table 11- Capacity of potential executing entities to carry-out gender responsive activities

Potential executing entity	Skills and expertise to provide gender	Specific requirements execution entities for compliance	Capacity building needs
ACS	Yes	- Appoint an Environmental and Social Policy expert (among technical experts) - Reinforce the role of the gender focal point - -Capacity to comply to the Adaptation Fund Environment and Social Policy and implementation of the ESMP guided by IFAD - Capacity to comply to the Adaptation Fund Gender Policy	- Awareness/training on requirements - Share guidelines for execution entities to comply and to ensure 'opportunities' are identified and exploited

6. Opportunities for promoting 'women' and 'youth' as agents of change

The project aims to target women and youth in community level skill building and trainings and to especially target women-headed households. Opportunities include:

✓ **Gender**

- o Engage women in the early stages of planning and in project implementation,
- o Foster networking opportunities and partnerships among the various women's groups, cooperatives, local organizations, government agencies, research institutions, and others working on climate resilience.
- o Develop and implement community-level awareness-raising programmes targeting both men and women to address restrictive social norms and negative gender stereotypes,
- o Conduct workshops and training sessions to enhance women's knowledge and skills in climate change adaptation, disaster risk reduction, sustainable agriculture, water management, and renewable energy technologies as well as leadership, entrepreneurship, financial management and community development,
- o Ensure that women have equal access to resources such as land, credit, technology, and markets.
- o Support women in diversifying their livelihoods to reduce dependence on climate-sensitive sectors. Promote income-generating activities such as agroforestry, eco-tourism, handicrafts, and climate-resilient agriculture practices.
- o Provide inputs in the form of grants for young and female farmers to increase their incomes and help them adapt to climate change and/or facilitate their access to funding.

- ✓ **Youth**
  - o Enhance the capacity of young people through the provision of leadership training and skill- building workshops to allow them to prepare for and implement climate resilience projects. Focus on fostering skills such as communication, problem-solving, teamwork, and project management'
  - o Help build youth assets by supporting them to set up income-generating activities.
  - o Support the development of locally appropriate platforms for youth that enable them to identify and prioritize their needs, how those needs might be addressed through engagement, and how they can lead initiatives to address needs throughout the process. Use creative and interactive methods to engage youth, such as workshops, seminars, competitions, art exhibitions, and theatre performances.
  - o Promote entrepreneurship opportunities for young people in green and sustainable industries, such as eco-tourism, renewable energy, organic farming, and green technology.
  - o Develop a dedicated youth civic engagement activity, as well as working to integrate youth into existing activities.
  - o Providing inputs in the form of grants for young and female farmers to increase their incomes and help them adapt to climate change and provide training, mentorship, and access to financing to support youth-led green businesses.

7. Strategy

Strategic pathways: By specifically focusing on gender equality and women's empowerment, the CC- REC project will deepen the impact and strengthen the sustainability of its efforts to restore climate-smart landscapes and support resilient livelihoods in the Shouf-West Beqaa-Mount Hermon corridor through the adoption of nature-based solution. It will use a combination of multiple and complementary gender practices that facilitate changes in gender roles and relations. The project will improve women's access to resources and opportunities in combination with practices to enhance women's and men's awareness and consciousness. In addition, it will engage in policy dialogue on gender equality and women's empowerment. Three strategic pathways for gender equality and women's empowerment will be followed:

- Promote economic empowerment to enable rural women and men to have equal opportunities to participate in and benefit from profitable economic activities.
- Enable women and men to have an equal voice and influence in rural institutions and organizations; and,
- Achieve a more equitable balance of workloads and the sharing of economic and social benefits between women and men.

The implementation of the three components of the project will be informed by a gender and youth analysis, which will take an intersectional approach and explore the roles and relationships between people of different genders, as well as gender- and youth-specific opportunities, barriers, and decision-making power. With this knowledge, actions can be planned and implemented in ways that recognize gender and age roles and dynamics while tackling discriminatory norms and practices.

The planning of actions will be a participatory process that brings together all relevant stakeholders. This includes local authorities, cooperatives, NGO's, farmers, and community members. The leaders of planning processes will actively work to create opportunities for meaningful participation by women, youth and others whose voices are often left out of decision making. This will require targeted consultations, capacity building, and engagement of facilitators from the excluded groups.

Targeted actions that address gender- and age-specific needs and capacities will be included. These actions might be needed to reduce vulnerability of livelihoods, recognizing gender-specific roles, to overcome gender-based barriers to resource access and control or to channel resources on a priority basis to groups that are typically excluded, such as women's and youth groups, to ensure that they can meaningfully participate in the planning and implementation of actions. As the actions are implemented, it will be important to engage with decision makers at different levels to raise awareness of discriminatory policies and practices, and to promote a governance of ecosystem services that is gender-equitable and inclusive.

The CC-REC project will support multi-stakeholder platforms and participatory processes to improve landscape governance and management. Therefore, throughout its implementation, specific attention will be given to participatory reflective monitoring of the inclusiveness of landscape management by using tools like those included in the handbook "How are we doing?"[177].

The pathways for gender equality in the CC-REC project are represented in the table below knowing that the project

[177] CIFOR-ICRAF (2020). How are we doing? A tool to reflect on the process, progress and priorities of your multi-stakeholder forum. https://www.cifor.org/knowledge/publication/7796

is structured around three components:

- **Component 1.** Capacity development and policies for resilient landscapes and livelihoods.
- **Component 2.** Nature-based solutions for environmental, social, and economic sustainability.
- **Component 3.** Monitoring, knowledge management and awareness raising.

Outcomes: the components are structured according to outcomes designed to be implemented in an integrated fashion and to achieve the stated goal and objective:

- **Outcome 1.1**: Local beneficiaries empowered to adopt climate-smart nature resource management, agriculture, and marketing through capacity development.
    - o **Output 1.1.1:** Set of technical guidelines and protocols for climate-smart natural resource management, sustainable agriculture, and green marketing produced by a team of national and international experts (USD 96,170)
    - o **Output 1.1.2:** Training of trainers' program implemented, based on the guidelines and protocols produced (USD 90,364)
    - o **Output 1.1.3:** Full capacity development program implemented, targeting the direct beneficiaries in the landscapes (USD 166,200)
- **Outcome 1.2**: Climate-smart policies and regulations adopted by the municipalities and protected area authorities of the landscapes.
    - o **Output 1.2.1**: Policy recommendations for mainstreaming the climate-smart priorities into landscape-level plans developed and adopted (USD 82,500)
- **Outcome 2.1**: Ecosystem restoration and adaptive agriculture solutions implemented in the critical climate risk areas of the landscapes.
    - o **Output 2.1.1**: Priority ecosystems restored and managed in each landscape following the agreed guidelines. (USD 901,850)
    - o **Output 2.1.2**: Priority smallholder farmland production systems restored and managed in each landscape following the agreed guidelines (USD 741,708)
- **Outcome 2.2.** Innovative marketing strategies and value chain improvement measures adopted for key products and services in the landscapes.
    - o **Output 2.2.1:** Brand marketing strategy for climate-smart commodities developed in each landscape, based on existing best practices (USD 375,000)
    - o **Output 2.2.2**: Local value chains and agrobusiness established/improved based on climate- smart criteria (USD 840,00)
- **Outcome 3.1.** Project practitioners enabled to assess co-benefits of climate-smart landscape interventions.
    - o **Output 3.1.1:** Protocols and tools for self-assessment of impacts and co-benefits of climate- smart interventions developed and applied by project practitioners (USD 84,992)
- **Outcome 3.2.** Project practices and lessons learned disseminated through awareness raising and knowledge exchange at the national and international levels.
    - o **Output 3.2.1: A**wareness raising programme designed and implemented at the landscape and the national levels, using media tools and social opportunities (USD 107,000)
    - o **Output 3.2.2.:** Lessons learned, and best practices disseminated (USD 101,361).

Goal	Deepen the impact and strengthen the sustainability of CC-REC's efforts to restore climate-smart landscapes and support resilient livelihoods in the Shouf-West Beqaa-Mount Hermon corridor through the adoption of nature-based solution		
Outreach	At least 30 percent of beneficiaries will be women		
Outcomes	Economic empowerment	Voice and decision-making	Workload balance and wellbeing

Activities	- Creating new income opportunities for women (e.g climate adaptive businesses). - Supporting women to set up their own climate resilient businesses including non- traditional enterprises. - Increase women's use of business support services (e.g through awareness raising). - Adapting training to the needs of women. - Sensitize men and boys as a strategy to support the economic engagement of women.	- Policy recommendations for mainstreaming climate smart priorities will purposely take into account women's needs and aspirations. - Representation of women in various activities will be guaranteed. - Arrangements will be made to ensure that the needs and aspirations of women are taken into account the developed guidelines and account in the policy recommendations activities. - Work on developing gender desegregated data. - Improving access to information (e.g. climate, market, etc.). - Promotion of female role models (such as successful female entrepreneurs).	- Time- and labour-saving technologies will be promoted (e.g. as part of the support for climate-adaptive businesses). - Gender issues including addressing gender-based stereotypes, will be incorporated in trainings. - Awareness raising on gender-based violence and on means to open businesses and access micro-funding.
	Including a gender-dimension in all policy engagement activities		
M&E	Sex and age desegregated data		

Activities per outcome:

Component 1. Capacity development and policies for resilient landscapes and livelihoods.	
Outcome 1.1: Local beneficiaries empowered to adopt climate-smart nature resource management, agriculture production, and marketing through capacity development Indicators/targets: *(i) 80% trained beneficiaries reporting adoption of climate-smart systems and practices.*	• Ensure presence of women in the task force and train them on key gender issues (PMU gender specialist). • Carry out gender analysis to inform the development of content for the climate-smart models, technical guidelines and protocols • Ensure that the training program includes topics such as GBV, entrepreneurship, business management, access to finance, leadership and advocacy • Ensure proper representation of women (at least 30%) in the workshops to prioritize critical climate-risk areas and the set of climate-smart practices • Ensure trainings consider women's needs (e.g. timing, location, literacy levels, etc.) • Raise awareness on Gender Base Violence, entrepreneurship, business management, access to finance, leadership and advocacy. • Raise awareness on constraints related to land use and tenure and supporting women's access to land. • Organise outreach campaigns targeted at women to identify local champions that could be used as female role models. • Ensure gender parity with the number of trainees involved in ToT. • Carry out gender assessment to inform the elaboration of the material to be disseminated and to ensure it is gender responsive (, i.e. they respond to women's specific productive needs, capacities and knowledge in the targeted sectors and value chains) and ensure that language, examples and content in general does not reinforce stereotypes and bias against women and avoid using traditional gender patterns. • Introduction of household methodologies, e.g. principles of the Gender Action and Learning System (GALS).
Outcome 1.2: Climate-smart policies and regulations adopted by the municipalities and protected area authorities of the landscapes. Indicators/targets: *(ii) 38 municipalities and PA authorities' issue and adopt regulations supporting CC adaptation.*	• Carry out gender analysis to identify gender gaps in the existing policy framework and to inform the development of recommendations for mainstreaming Local landscape level plans • Creating opportunities for meaningful participation by women in the local landscape level plans • Participatory reflective monitoring of the inclusiveness of landscape level plans by using tools like "How are we doing?
Component 2: Nature-based solutions for environmental, social, and economic sustainability	
Outcome 2.1: Ecosystem restoration and adaptive agriculture solutions implemented in critical climate risk areas of the landscapes. Indicators/targets: *(iii) 690 ha of restored and sustainably managed ecosystems.* *(iv) 908 ha of farmland under climate smart production systems.*	• Positive discrimination of female producers in terms of investment support (at least 30% grants to be allocated to women). • Positive discrimination of professional female workers in terms of employment opportunities linked to project investments on adaptive management and ecosystem restoration of forests, pastureland and farmland (at least 30% jobs to be allocated to women). • Priority given to support to help reduce women's time and labour constraints. • Strengthen women's social capital and access to information through municipalities or cooperatives.
Outcome 2.2. Innovative marketing strategies and value chain improvement measures adopted for key products and services in the landscapes.	• Develop marketing strategies that respond to the needs of women and local women cooperatives.

Indicators/targets: *(v) 80% of supported rural enterprises reports increased income.*	• Support organisations of female producers/farmers and/or entrepreneurs throughout all the activities and not only in relation to upgrading and/or establishing women led businesses related to agri-food products. • Positive discrimination of female entrepreneurship in terms of investment support (50% grants to be allocated to women-led cooperatives).
Component 3: Climate-resilience assessment, knowledge management and awareness raising	
Outcome 3.1. Project practitioners enabled to self-assess co-benefits of climate-smart landscape interventions Indicators/targets: *(vi) 80% beneficiaries have adopted self-assessment monitoring protocols and tools.*	• Develop kits for self-assessment protocols and tools that integrate the gender specificities. • Ensure representation of at least 30% of women in the workshops organised in each landscape.
Outcome 3.2 Project practices and lessons learned disseminated through awareness raising and knowledge exchange at the national and international levels. Indicators/targets: *(vii) 155,836 people reached by the project's communication work.*	• Conduct workshops based on the concept of "women talking to women", identifying women entrepreneurs or farmers with valuable experiences to share with other women. • Ensure visibility of the women best "stories of change" through featuring at national and regional fora. • Organise exchange visits for female producers/farmers and/or entrepreneurs and support their participation in local, regional and national events such as agricultural fairs, etc.

8. Implementation arrangements

Gender and Social Inclusion aspects of CC-REC will be managed by the Gender Specialist, who will be responsible for gender and social inclusion issues (overseeing the implementation of the gender strategy, building the capacity of staff and helping colleagues to address considerations related to gender equality and women's empowerment in their operations, including knowledge management, M&E, indicators and measurement of results).
Dedicated budget has been allocated to address these issues, as well as to ensure the mainstreaming of gender considerations into all of CC-REC's activities. The following arrangements will guarantee that gender is taken into account in the implementation of the project:

- A dedicated staff will be recruited for gender and social inclusion aspects.
- A strategy and project-type action plan will be established at project start-up.
- Budget has been allocated for specific gender- and youth-related activities.
- Quotas have been set for women (30%) and youth (30%) as a percentage of beneficiaries, and all collected and analysed data will be disaggregated by sex and gender.
- Information campaigns and outreach events targeting women and youth will be carried out during project implementation.
- Female and young trainers will be mobilized.
- Studies undertaken by the project will include a gender and age perspective.
- Gender parity in the PMU will be encouraged.
- Responsibility for gender mainstreaming will be included in the terms of reference of all key project staff.
- Responsibility for gender mainstreaming will be included in the terms of reference of service providers.
- In all its activities, compliance with IFAD's policy on preventing and combating sexual harassment, exploitation and abuse will be sought. This will be reflected in the terms of reference of all key project staff and service providers.

Gender action plan and results framework

Gender-related project objective: restore climate-smart landscapes and support resilient livelihoods for 20 000 women's in three target areas to the negative impacts of climate change					
Component 1. Capacity development and policies for resilient landscapes and livelihoods.					
Outcome 1.1: Local beneficiaries empowered to adopt climate-smart nature resource management, agriculture production, and marketing through capacity development					
Activities	**Indicator**	**Targets**	**Timeline**	**Responsibilities**	**Costs**
• Ensure presence of women in the task force and gender train them	Number of women in the task force and number of gender training carried	3	Year 1	PMU	Included throughout Components 1 and 2 as Task Force experts fees.
• Carry out gender analysis to inform the development of content for the technical guidelines and protocols	Number of gender-responsive climate-smart models	6	Year 1	TFE & PMU	Included in budget of outcome 1.1
• Ensure proper representation of women (at least 30%) in the workshops to prioritize critical climate-risk areas and the set of climate-smart practices	% of women participating in workshops	30	Year 1	TFE & PMU	Included in budget of outcome 1.1
• Ensure that trainings programs and learning methodologies and tools (e.g. Gender Action and Learning System - GALS) consider gender topics and women needs (e.g. timing, location, literacy levels, etc.)	% of women participating in trainings provided by the project	30	Year 1	TFE & PMU	Included in budget of outcome 1.1
• Organise outreach campaigns targeted at women to identify local champions that could be used as female role models.	Number of outreach campaigns organised	3 (1 in per landscape)	Year 1	PMU	Included in budget of outcome 1.1
• Ensure gender representation with the number of trainees involved in ToT.	% of women trainees	30 (distributed over the 3 landscapes)	Year 1 to 2	TFE & PMU	Included in budget of outcome 1.1
• Ensure the production of gender-responsive portfolio of materials for the different climate-smart models (, i.e. they respond to women's specific productive needs, capacities and knowledge in the targeted sectors and value chains) and ensure that language, examples and content in general does not reinforce stereotypes and bias against women and avoid using traditional gender patterns.	Number of climate-smart models with gender-responsive portfolio of materials	6	Year 1 to 2	TFE & PMU	Included in budget of outcome 1.1
Outcome 1.2: Climate-smart policies and regulations adopted by the municipalities and protected area authorities of the landscapes.					
Activities	**Indicator**	**Targets**	**Timeline**	**Responsibilities**	**Costs**
• Carry out gender analysis to identify gender gaps in the existing policy framework and to inform the development of recommendations for	Number of gender analysis carried out	1	Year 1	TFE & PMU	Included in budget of outcome 1.2

mainstreaming local and landscape level plans.					
Component 2: Nature-based solutions for environmental, social, and economic sustainability					
		Outcome 2.1: Ecosystem restoration and adaptive agriculture solutions implemented in critical climate risk areas of the landscapes.			
Activities	Indicator	Targets	Timeline	Responsibilities	Costs
• Positive discrimination of female producers and/or entrepreneurs in terms of investment support (at least 30% grants to be allocated to women)	% of women amongst those benefiting from grants	30	Year 2 to 3	PMU	Included in budget of outcome 2.1
• Strengthen women's social capital and access to information through municipalities and/or cooperatives.	% women amongst those benefitting from municipalities and/or cooperatives	30	Year 2 to 3	PMU	Included in budget of outcome 2.1
Outcome 2.2. Innovative marketing strategies and value chain improvement measures adopted for key products and services in the landscapes.					
Activities	Indicator	Targets	Timeline	Responsibilities	Costs
• Develop marketing strategies that respond to the needs of women and local women cooperatives.	Number of women-oriented strategies developed	9	Year 2 to 3	TFE, PMU & DMO	Included in budget of outcome 2.2
• Support organisations of women producers/farmers and/or entrepreneurs throughout all the activities and not only in relation to upgrading and/or establishing women led businesses related to agri-food products.	Percentage of grants supporting women producers/farmers and/or entrepreneurs	50	Year 2 to 3	TFE & PMU	Included in budget of outcome 2.2
Component 3: Climate-resilience assessment, knowledge management and awareness raising					
Outcome 3.1. Project practitioners enabled to assess co-benefits of climate-smart landscape interventions					
Activities	Indicator	Targets	Timeline	Responsibilities	Costs
• Develop kits for self-assessment protocols and tools that are gender inclusive	Number of kits developed	3	Year 1	TFE & PMU	Included in budget of outcome 3.1
• Ensure representation of at least 30% of women in the workshops organised in each landscape	Percentage of women represented in the workshops	30	Year 2, 3 and 4	PMU	Included in budget of outcome 3.1
Outcome 3.2. Project practices and lessons learned disseminated through awareness raising and knowledge exchange at the national and international levels.					
Activities	Indicator	Targets	Timeline	Responsibilities	Costs
• Conduct workshops based on the concept of "women talking to women", identifying women entrepreneurs or farmers with valuable experiences to share with other women.	Number of workshops held	3 (1 per region)	Year 2 and 3	PMU	Included in budget of outcome 3.2
• Organise exchange visits for female producers/farmers and/or entrepreneurs and support their participation in local, regional and national events such as agricultural fairs, etc.	Number of exchange visits held	10	Year 2 to 4	PMU	Included in budget of outcome 3.2

• Ensure visibility of the women best “stories of change” through featuring at national and regional fora.	Number of media campaigns organised around the women best “stories of change”	3 (1 per region)	Year 3 and 4	PMU	Included in budget of outcome 3.2

ANNEX 5 -
GRIEVANCE AND REDRESS MECHANISMS

The project will utilize the existing IFAD grievance mechanism to allow those affected to raise concerns that the project is not complying with its social and environmental policies or commitments, first by establishing a grievance mechanism at project level, drawing from the existing mechanism of RCTP116. The consultative process with the community and beneficiaries aims to ensure prevention of grievances that might arise from the project activities. However, if there are any grievances, the below redress mechanism is proposed:

Grievance redress mechanism should be shared with the community during the project inception workshop and subsequent meetings with the beneficiaries.

(i) As part of the grievance redress mechanism, the contact details of the project partners (Project Coordinator) should be made available to stakeholders including project beneficiaries and the community. Contact numbers would be displayed at common or predominant places along–with the project details. This is expected to promote social auditing.

(ii) Complaints must be put forward by at least two people who are both nationals of the country concerned and/or living in the project area.

(iii) Complaints from foreign locations or anonymous complaints will not be taken into account.

(iv) Complaints must concern projects currently under design or implementation. Complaints concerning closed projects, or those that are more than 95 per cent disbursed, will not be considered.

Grievances are aimed to be addressed at the field level by the project team which will be the first level of redress mechanism. If the grievance is not resolved at the field level, it will be escalated to the PMU and then to IFAD who will be responsible for addressing grievances related to violation of any of the provisions of Environmental and Social Policy of the Adaptation Fund. All grievances received and actions taken on them will be put up before the PMU and Steering Committee meetings and will also be included in the progress reports for monitoring purposes.

In all cases, if the complainants disagree with IFAD's response, they may submit a request to SECAPcomplaints@ifad.org and request that an impartial review be carried out by the Office of the Vice- President. The Office of the Vice-President will decide on the steps to be taken to examine such complaints, including, if necessary, contracting external experts to review the matter. The complainants will be informed of the results of the review. IFAD will include in its Annual Report a list of received complaints and a summary of actions taken to address them.

The Ad hoc Complaint Handling Mechanism (ACHM) of the Adaptation Fund can be directly used in cases where the Parties have failed to reach a mutually satisfactory solution through the implementing entities' grievance mechanism within a year. The Adaptation Fund Board Secretariat independently manages all aspects related to the ACHM, under the oversight of the Ethics and Finance Committee of the Board. Guidance to ACHM is available at this link: Ad Hoc Complaint Handling Mechanism - Adaptation Fund.

Annex 6
Identification of priority climate risk types in the target landscapes and prioritization of climate-smart activities for each type

This Annex describes the process for the identification of priority climate risk types in the target lanscapes, done through the GIS and desk/field data collection, analysis, and validation. This process has informed the mapping of the landscape plots with the highest risk for each type, concluding with the prioritization of climate-smart activities for each type.

Step 1 – GIS Mapping

Climate risk 1 - *Sustainable, integrated biomass management to reduce fuel load in the interface of High Fire Spread Risk (HFSR) with High Fire Ignition Risk (HFIR)*

Define High Fire Spread Risk (HFSR), High Fire Ignition Risk (HFIR), and the interface between the two types of risk.

HFSR: Sentinel-2 multispectral satellite images from 2018 to 2022 were processed using the Google Earth Engine platform to extract the Normalized Difference Vegetation Index (NDVI), which represents vegetation density and serves as an indicator of biomass. From this dataset, average NDVI values were calculated, highlighting the spatial distribution of biomass density across the study area. Additionally, forest regions were delineated based on the Land Cover Land Use map of Lebanon, produced in 2017 at a scale of 1:20,000.

The two layers were overlaid to classify forest zones into three levels of biomass density: low, medium, and high. This intersection between the NDVI-derived biomass density and forest zones allowed us to generate a High Fire Spread Risk (HFSR) map, as illustrated in the figure below.

Figure 1. Normalized Difference Vegetation Index in the target landscapes.

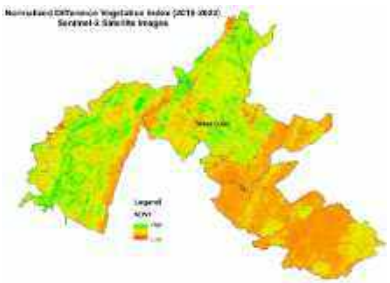
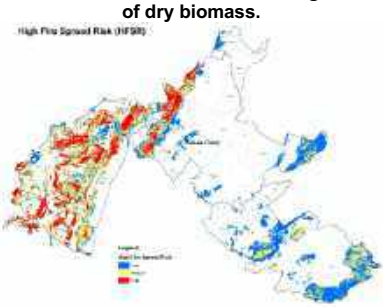


Figure 2. High Fire Spread Risk Map. Very dense forest stands and successional shrubland with high accumulation of dry biomass.



HFIR: For the High Fire Ignition Risk (HFIR) assessment, several factors were considered, including proximity to urban areas, roads, and the EDL network; agricultural lands adjacent to dense forests or shrublands where farmers often engage in uncontrolled burning of agricultural waste; and proximity to industrial infrastructure or waste disposal sites, where productive activities or waste accumulation pose a high fire risk.

Spatial analysis tools such as distance and buffer operations were used to derive these layers. Each layer was normalized to a scale of 0 to 100 for consistency. These raster layers were then combined using equal weighting, and the final HFIR map was generated through a linear combination approach. The resulting HFIR values were classified into five categories: very low, low, medium, high, and very high.

Figure 3

Figure 4

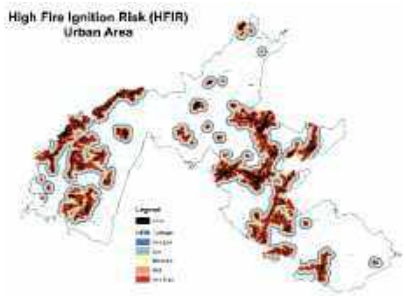


Figure 5

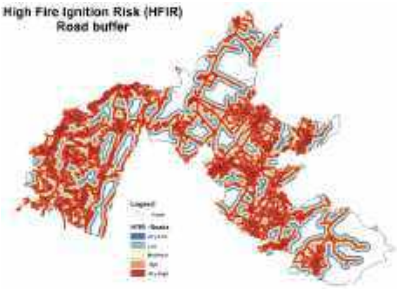


Figure 6

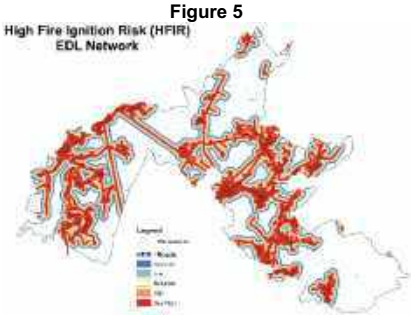


Figure 7

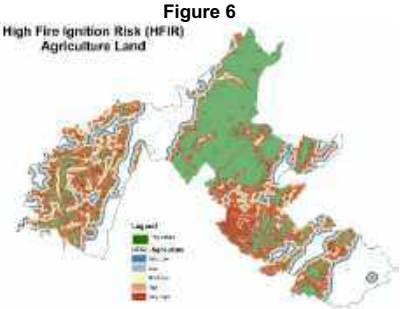
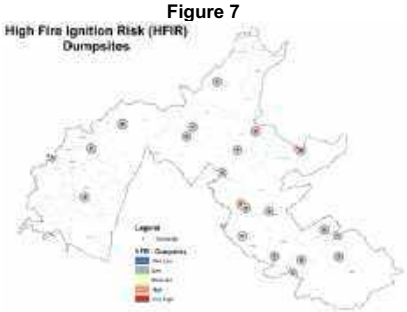


Figure 8



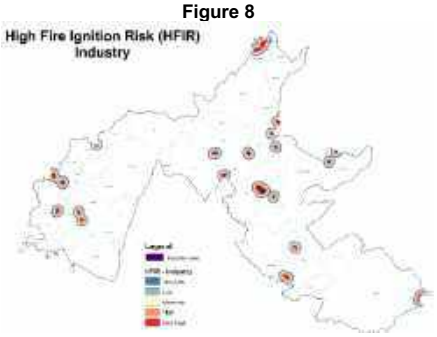
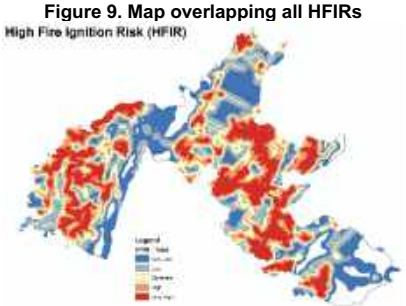


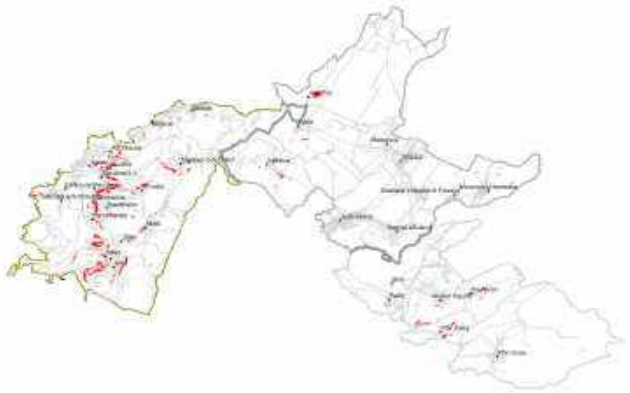
Figure 9. Map overlapping all HFIRs



Mapped forest plots with High Fire Risk (HFR) (Red Polygons): The HFR map results from the overlapping of the HFSR and HFIR maps. The map quantifies the landscape plots where HFIR and HFSR interface. The map includes forest plots with HFSR buffering infrastructures (urban settlements, industrial buildings, waste disposal points, roads, power lines) with

HFIR. Interventions to reduce excessive fuel load through forest thinning and pruning operations will occur in the prioritized forest plots as well as on security strips of approx. 100 m width in along roads and power lines, and in the perimeters surrounding urban areas and dispersed buildings and farmland.

Figure 10. Red polygons with High Fire Risk in the target landscapes



Mapped farmland plots buffering HFR forest stands (Pink polygons): This map includes farmland plots buffering forest stands with high fire spread risk (HFSR), where burning stubble carries a high risk of fire ignition (HFIR). The project will work with the owners of these farmland plots (agricultural terraces with olive and fruit trees) to raise awareness about the need to avoid burning pruning waste, and to establish agreements so that, once the pruning waste is stacked, it is collected by workers in the briquette and compost factories. Likewise, the olive pomace from pressing the olives will also be collected for the production of briquettes, thus avoiding soil and water pollution problems.

Figure 11. Pink polygons representing farmland plots with high fire ignition risk buffering forest plots with high fire spread risk

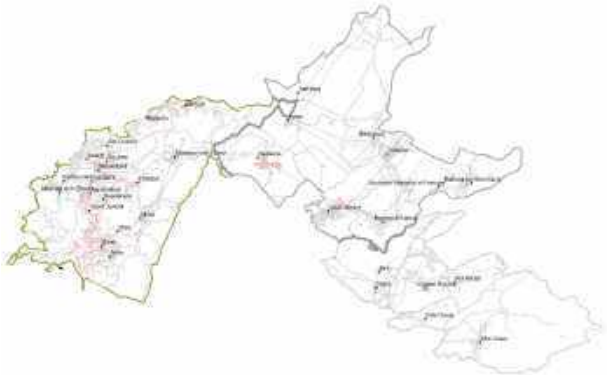


Table 1 (at the end of the Annex) includes the number of hectares of forest plots with high fire risk (Red polygons) and of farmland plots with high fire ignition risk that occur in the municipalities of the three target landscapes (Shouf L., West Beqaa L., and Rashaya L.).

Climate risk 2 - ***Small Farmland Plots Buffering Water Courses Affected by Flood Risk***

The dark blue polygons corresponding to "**Small Farmland Plots Buffering Water Courses Affected by Flood Risk**" were created by combining GIS analyses with national-scale data. Small farmland parcels were identified using parcel maps available for the study area, focusing on plots of limited size. Flood risk zones were delineated using a flood risk map produced by CNRS, available at the national level, which integrates factors such as watercourse flow, topography, and historical flood data. Small parcels within a defined buffer distance from these high-risk watercourses were selected and mapped.

Figure 12. Dark blue polygons representing farmland plots affected by flood risk

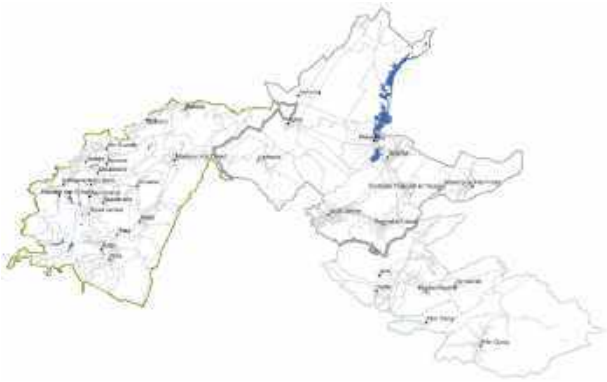


Table 1 (at the end of the Annex) includes the number of hectares of small farmland plots with high flood risk (Dark blue polygons) that occur in the municipalities of the three target landscapes (Shouf L., West Beqaa L., and Rashaya L.).

Climate risk 3 - ***Small Farmland Plots Buffering Water Courses Affected by hydrological drought***

The light blue polygons corresponding to "**Small Farmland Plots Buffering Water Courses Affected by Hydrologic Drought Trend**" were created using GIS analyses and regional data. Small farmland parcels were identified using parcel maps for the study area, focusing on plots of limited size. Agricultural lands reliant on irrigation and heavily affected by water scarcity and groundwater depletion were identified based on regional studies and datasets. Small parcels within a defined buffer distance from these impacted watercourses were selected and mapped.

Figure 13. Dark blue polygons representing farmland plots affected by hydrological drought

Table 1 (at the end of the Annex) includes the number of hectares of small farmland plots with high hydrological drought (Light blue polygons) that occur in the municipalities of the three target landscapes (Shouf L., West Beqaa L., and Rashaya L.).

Climate risk 4 - ***Small Farmland Plots Affected by Runoff Water Erosion and Landslides in the Mountain Slopes***

The yellow polygons corresponding to "**Small Farmland Plots Affected by Runoff Water Erosion and Landslides in the Mountain Slopes**" were created by integrating GIS analyses with parcel and risk data. Small farmland parcels were identified using parcel maps and the Land Cover Land Use map of Lebanon, focusing on agricultural lands situated on mountain slopes. Risk zones for runoff water erosion and landslides were delineated using the soil erosion map and landslide risk map developed by CNRS and the SDATEL project, which provided detailed insights into areas prone to soil degradation and slope instability. Small farmland parcels located within these high-risk zones were selected and mapped.

Figure 14. Yellow polygons representing farmland plots affected by ***Runoff Water Erosion and Landslides in the Mountain Slopes***

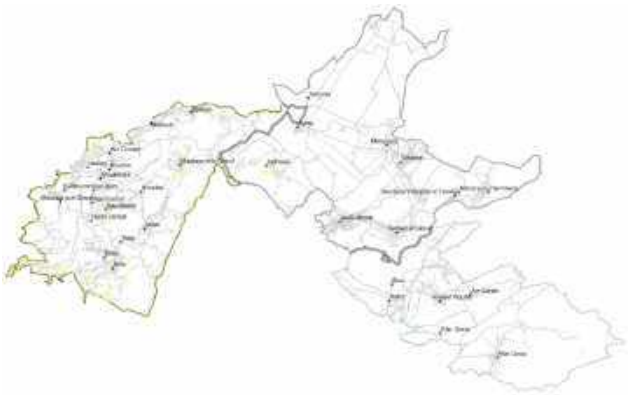


Table 1 (at the end of the Annex) includes the number of hectares of small farmland plots affected by *Runoff Water Erosion and Landslides in the Mountain Slopes* (Yellow polygons) that occur in the municipalities of the three target landscapes (Shouf L., West Beqaa L., and Rashaya L.).

Climate risk 5 - ***Small Farmland Plots in Sensitive Areas with High Soil Quality in Rashaya Landscape Affected by Drought and Frost/Hail Risk***

The green polygons corresponding to "**Small Farmland Plots in Sensitive Areas with High Soil Quality Affected by Drought and Frost/Hail Risk**" were created by integrating GIS analyses with parcel and risk data. Small farmland parcels were identified using parcel maps in villages with available cadastral data and cross-referenced with the Land Capability map derived from the soil map and its characteristics to locate areas with high soil quality. Risk zones for drought and frost/hail were delineated using the respective risk maps. Small farmland parcels within these sensitive, high-risk areas were selected and mapped.

Figure 15. Green polygons representing farmland plots ***in Sensitive Areas with High Soil Quality in Rashaya Landscape Affected by Drought and Frost/Hail Risk***

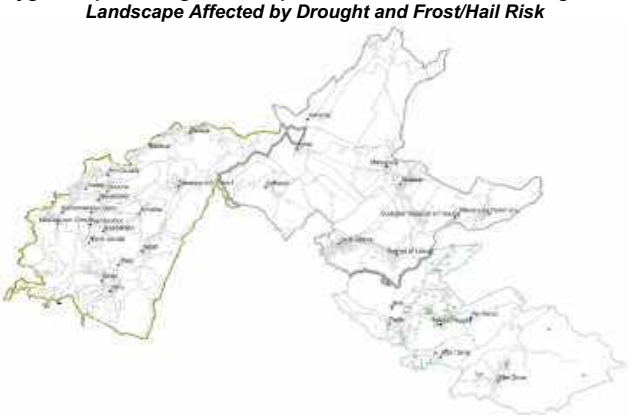


Table 1 (at the end of the Annex) includes the number of hectares of small farmland plots (Green polygons) that occur in the municipalities of the three target landscapes (Rashaya L.).

Climate risk 6 - ***Degraded Pastures/Woody Vegetation in Mountain Slopes/Hills Surrounding Critical Farmland Sites in Rashaya Landscape Affected by Drought and Frost/Hail Risk***

The brown polygons corresponding to "**Degraded Pastures/Woody Vegetation in Mountain Slopes/Hills Surrounding Critical Farmland Sites**" were created using GIS analyses, combining data from previous studies and the Land Cover Land Use map of Lebanon. Grassland areas were extracted from the Land Cover Land Use map, and rangeland maps from earlier research were used to identify degraded pastures and woody vegetation. Areas showing significant vegetation cover decline, based on vegetation index changes between 2000 and 2020, were delineated. These degraded rangelands, located on mountain slopes and hills, were analyzed to identify zones interfacing with critical farmland sites.

Figure 16. Brown polygons representing plots of degraded pasture/woody vegetation *in mountain slopes*

Table 1 (at the end of the Annex) includes the number of hectares of small farmland plots (Brown polygons) that occur in the municipalities of the three target landscapes (Rashaya L.).

Step 2 – *Select the nature of the adaptation activities to reduce climate risks*

The project design team has identified the priority adaptive activities to be implemented in the mapped plots for climate risk reduction and socio-ecological resilience enhancement. The adaptive activities have been selected as follows: (i) literature review on previous successful pilot experiences that have implemented resilience-enhancing and risk-reduction activities in the project area and eligible for upscaling within the AF project framework; (ii) consultation with the experts who have led the implementation of the previously identified and analyzed pilot actions, to obtain details about them (e.g. design of the interventions, necessary resources, costs, etc.); (iii) visit to a selection of pilot areas with the experts and local stakeholders involved to visualize the process/results and to obtain the feedback of the stakeholders involved; (iv) introduction of the GIS mapping exercise/results and the prioritized climate-smart activities to increase socio-ecological resilience and reduce climate risks in the target landscapes in the framework of the project design stakeholders consultation and validation workshops.

The following table provides a summary of the nature of climate change adaptation activities and their characteristics to be implemented in the landscape plots selected for their high risk to the main types of climate risks.

Location/Climate Risk	Nature of Activities	Characteristics
Figure 10: Forest stands with high fire risk (Red polygons)	• Thinning and pruning bringing the forest stands to a percentage of forest canopy cover and stand structure that reduces by 50% future burned area probability.	• Selection, marking, cutting and extraction of the quantified volume of wood (% of Brutia pine dominated trees with growth problems; % of stumps from coppiced *Quercus coccifera* and *Q. infectoria*; % of high shrubs such as *Spartium junceum*), with the condition of leaving at least 3% of the treated volume on the plot (standing and laying deadwood). • Chipping of smaller-sized wood on the site and transporting it to the briquette production factories and composting units. • Stacking of larger-sized wood for the forest stand owner, and in the case of public land, for distribution to vulnerable families with greater energy insecurity in the municipalities. • Controlled grazing agreements with local shepherds.
Figure 11: small farmland plots with high fire ignition risk (Pink polygons)	• Collection and staking of olive/fruit tree pruning waste.	• Chipping of smaller-sized wood on the site and transporting it to the briquette production factories and composting units.
	• Restoration of degraded terraces.	• Dry-stone wall rehabilitation and soil enrichment (compost). • Seedling planting in rows alternating a diverse set of crops, including a selection of: (i) climate-adapted local varieties of olive, vine and fruit trees (fig, pomegranate, almond, pistachio, jujuba, stone pine, walnut); (ii) wild aromatic/edible plants (Rhus coriaria, Gundelia tournefortii,

		Lavandula spp, Rosmarinus officinalis, Thymbra spicata); (iii) cover crops including local varieties of cereals and legumes. • Integration of animal factor (limited number of sheep and beekeeping). • Regenerative agriculture production techniques (described in the project document). • Conservation and/or restoration (seed and seedling planting of native species that provide key ecosystem services to agriculture production) of farmland habitats in/around the restored terraces.
Figure 12: small farmland plots with high flood risk (Dark blue polygons)	• Conversion of conventional irrigated crops into plots with a regenerative agronomic system and efficient irrigation	• Automatized efficient irrigation with solar pumping system. • Seeds and seedlings from climate-adapted crop varieties of potato, tomato, cucumber, and adapted fodder species (e.g. Medicago, Lathyrus, etc). • Seedlings from local vine and fruit tree varieties (e.g. pear, plum, cherry, apple, almond) grafted on climate-adapted rootstocks of crop wild relatives. • Agronomic calendar, principles and practices for regenerative/biodynamic farming: equipment and inputs for no-till, permanent soil cover with mulching and cover crops, crop rotation and diversification, organic/biodynamic fertilization, weed control and integrated pest management. • Agreements with local shepherds on fodder and manure exchange.
	• Restoration of watercourse banks buffering the targeted farmland plots.	• soil bioengineering techniques e.g. brush layering and packing, fiber log and brush mattress, live fascines and stakes) and planting of seedlings for stabilization and revegetation of watercourse banks with native freshwater species (e.g. native species of willows, poplars, elms, ashes, reedmace, wild rose) to reduce risks and improve ecosystem services for crops (e.g. reduce energy and velocity of flood water, promote water infiltration and soil and nutrient retention, promote pollination, pest control, etc.).
Figure 13: small farmland plots highly affected by hydrological drought (Light blue polygons).	• Conversion of conventional irrigated crops into plots with a regenerative agronomic system under rainfed and/or efficient irrigation	• Automatized efficient irrigation with solar pumping system, only in farmland plots with legally established wells and reports from the Litani Authority indicating that water use and levels are sustainable. Otherwise, rainfed production will be promoted. • Seedlings from local vine and fruit tree varieties (e.g. almond, jujuba, apple, persimmon, pear, plum) grafted on climate-adapted rootstocks of crop wild relatives. • Agronomic calendar, principles and practices for regenerative/biodynamic farming: equipment and inputs for no-till, permanent soil cover with mulching and cover crops, crop rotation and diversification, organic/biodynamic fertilization, weed control and integrated pest management. • Integration of animal factor (limited number of sheep and beekeeping).
Figure 14: small farmland plots affected by runoff Water erosion in the Mountain Slopes (Yellow polygons)	• Restoration of degraded terraces.	• Dry-stone wall rehabilitation and soil enrichment (compost). • Seedling planting in rows alternating a diverse set of crops, including a selection of: (i) climate-adapted local varieties of olive, vine and fruit trees (fig, pomegranate, almond, pistachio, jujuba, walnut); (ii) wild aromatic/edible plants (Rhus coriaria, Gundelia tournefortii, Lavandula spp., Rosmarinus officinalis, Thymbra spicata); (iii) cover crops including local varieties of cereals and legumes. • Regenerative/biodynamic agriculture production calendars, principles and practices (described in previous sections). • Conservation and/or restoration (seed and seedling planting of native species that provide key ecosystem services to agriculture production) of farmland habitats in/around the restored terraces. • Integration of animal factor (limited number of sheep and beekeeping).

Figure 15: Small farmland plots in Sensitive Areas with High Soil Quality in Rashaya Landscape Affected by Drought and Frost/Hail Risk (Green polygons).	• Conversion of conventional rainfed crops into plots with a regenerative agronomic system under rainfed.	• Seeds from local cereal/legume varieties better adapted to climatic risks (e.g. wheat, barley, chickpeas), • Seedlings from local vine and fruit tree varieties (e.g. vine, sumac, pistachio, olive, almond, oregano, lavender) grafted on climate-adapted rootstocks of crop wild relatives. • Agronomic calendar, principles and practices for regenerative/biodynamic farming: equipment and inputs for no-till, permanent soil cover with mulching and cover crops, crop rotation and diversification, organic/biodynamic fertilization, weed control and integrated pest management. • Conservation and/or restoration (seed and seedling planting of native species that provide key ecosystem services to agriculture production) of farmland habitats in/around the targeted farmland plots. • Integration of animal factor (limited number of sheep and beekeeping).
Figure 16: plots of degraded pasture/woody vegetation affected by run-off erosion in mountain slopes (Brown polygons)	• Restoration and sustainable management of pastureland.	• Seedling planting of palatable native woody species (e.g. in woodland islets within large herbaceous pastureland, to increase the availability of food for livestock during the drought season (seen by shepherds as a major constraint). • Rotation/resting management system to reduce pressure and enhance recovery of degraded pastures. Acquisition and use of smart mobile fence equipment to organize grassland in paddocks to help apply rotational-resting techniques. • Rehabilitation and establishment of water troughs in critical sites supporting livestock water needs during drought season. • Agreements with local farmers on fodder and manure exchange.

Table 1. Number of hectares for each mapped climate risk (colored polygons) in the target municipalities/landscapes

Landscape/Municipalities	Yellow Polygons Small farmland sites affected by runoff water erosion and landslide (ha)	Dark Blue Polygons Small farmland sites buffering water courses affected by flood risk (ha)	Red Polygons Forest stands with high fire spread risk that interface with high ignition risk (ha)	Pink Polygons Small farmland sites buffering the forest stands with high fire (ha)	Light Blue Polygons Small farmland sites buffering water courses affected by hydrology (ha)	Green Polygons Small farmland sites in sensitive areas with high soil quality (ha)	Brown Polygons Degraded pastures woody vegetation in mountain slopes hills (ha)	Total
Landscape Shouf								
Aain Ouzeie	5.19	1.72	18.55	9.95	0.00	0.00	0.00	**35.41**
Aain Qania	0.00	1.60	27.67	16.47	0.00	0.00	0.00	**45.74**
Aammatour	21.31	13.21	31.57	54.88	0.00	0.00	0.00	**120.96**
Baadarane	9.59	0.00	21.08	24.86	0.00	0.00	0.00	**55.53**
Barouk	11.32	0.00	5.39	30.21	0.00	0.00	0.00	**46.92**
Batir	0.06	0.00	41.71	126.43	0.00	0.00	0.00	**168.20**
Batloun	3.92	0.00	8.67	28.76	0.00	0.00	0.00	**39.35**
Dayqoun	0.00	12.84	0.00	0.00	0.00	0.00	0.00	**12.84**
Botmeh	3.84	6.22	30.04	25.46	0.00	0.00	0.00	**65.56**
Haret Jandal	0.00	1.37	35.15	54.44	0.00	0.00	0.00	**90.96**
Jbaa Ech-Chouf	0.00	0.00	7.87	25.49	0.00	0.00	0.00	**33.35**
Jdeidet Ech-Chouf	4.34	3.39	11.58	12.17	0.00	0.00	0.00	**31.48**
Kahlounieh Ech-Chouf	0.00	15.28	0.00	0.00	0.00	0.00	0.00	**15.28**
Khraybet Ech Chouf	3.40	0.00	19.59	37.01	0.00	0.00	0.00	**60.00**
Maasser Ech-Chouf	27.41	0.00	27.05	25.48	0.00	0.00	0.00	**79.92**
Mazraat Ech-Chouf	0.12	1.19	8.82	2.85	0.00	0.00	0.00	**13.00**
Mokhtara	3.35	4.13	12.15	30.44	0.00	0.00	0.00	**50.06**
Mristi	4.14	0.00	7.34	13.78	0.00	0.00	0.00	**24.40**
Niha El-Chouf	64.52	0.00	49.20	38.16	0.00	0.00	0.00	**151.87**
Bitige	0.96	0.00	4.66	0.00	0.00	0.00	0.00	**5.64**
Sub-total	**161.09**	**60.71**	**371.91**	**559.32**	**0.00**	**0.00**	**0.00**	**1153.02**
Landscape West Bekaa								
Aana	1.20	0.00	10.84	2.92	4.07	0.00	0.00	**21.02**
Aammiq BG	0.50	0.00	19.67	6.27	0.19	0.00	0.00	**26.63**
Chebrqiyet Aammiq	0.00	50.39	0.00	0.00	3.45	0.00	0.00	**53.83**
Deir Tahniche	0.00	0.00	0.21	0.00	0.00	0.00	0.00	**0.21**
Ghazze	0.00	81.07	0.00	0.00	4.06	0.00	0.00	**85.13**
Haouch es-SaydÃ	0.00	0.00	0.00	0.00	21.26	0.00	0.00	**21.26**
Haouch Qayssar	0.00	0.00	0.00	0.00	16.72	0.00	0.00	**16.72**
Joubb Jannine	0.00	0.13	0.38	26.87	223.63	0.00	0.00	**251.01**
Kefraiya BG	2.00	0.00	16.06	97.02	4.62	0.00	0.00	**119.70**
Kamed El Laouz	0.00	0.00	0.00	0.00	12.79	0.00	0.00	**12.79**
Manara (Hammara) BG	5.74	0.00	6.53	22.86	0.00	0.00	0.00	**35.13**
Mansoura BG	0.00	85.25	0.00	0.00	46.98	0.00	0.00	**132.23**
Nasriyet Zahle	0.00	10.20	0.00	0.00	0.00	0.00	0.00	**10.20**
Soultan Yaacoub Faouqa	1.82	0.00	0.82	0.00	0.00	0.00	0.00	**2.64**
Tell Znoub	0.00	0.00	0.15	0.00	6.20	0.00	0.00	**6.35**
Haouch Tchefik EddÃ	0.00	0.00	0.79	1.97	0.00	0.00	0.00	**2.76**
Tchefik Qiqano	0.00	0.00	0.00	0.00	42.77	0.00	0.00	**42.77**
Tell El Akhdar	0.00	138.93	0.00	0.00	31.64	0.00	0.00	**170.57**
Sub-total	**11.26**	**365.96**	**55.45**	**159.93**	**418.38**	**0.00**	**0.00**	**1000.96**
Landscape Rachaya								
Aain Arab Rachaya	0.00	0.00	10.92	16.05	0.00	3.04	62.19	**93.09**
Biret Rachaya	0.00	0.00	0.12	0.00	0.00	47.53	34.86	**82.51**
Kfar Denis	0.00	0.00	[illegible]	[illegible]	0.00	[illegible]	[illegible]	**152.35**
Kfar Qouq	0.00	0.00	2.94	0.00	0.00	42.56	34.43	**79.93**
Khirbet Rouha	0.00	0.00	[illegible]	0.00	0.00	[illegible]	[illegible]	**259.07**
Rafid Rachaya	0.00	0.00	0.80	2.11	0.00	18.61	0.58	**22.15**
Sub-total	**0.00**	**0.00**	**[illegible]**	**[illegible]**	**0.00**	**227.87**	**370.77**	**689.60**
Total for the 3 Landscapes	**173.24**	**426.65**	**474.19**	**702.78**	**418.38**	**227.87**	**370.77**	**2853.89**

Annex 7
Templates for Relevant Adaptation Fund Core Impact Indicators

Adaptation Fund Core Impact Indicator "Number of Beneficiaries"				
Date of Report	19/12/2024			
Project Title	Climate Change Resilience and Ecosystem Connectivity (CC-REC)			
Country	Lebanon			
Implementing Agency	IFAD			
Project Duration	4 years			
	Baseline *(absolute number)*	Target at project approval *(absolute number)*	Adjusted target first year of implementation *(absolute number)*	Actual at completion[178] *(absolute number)*
Direct beneficiaries supported by the project	0	46,860		
Female direct beneficiaries	0	14,058		
Youth direct beneficiaries				
Indirect beneficiaries supported by the project	0	155,836		
Female indirect beneficiaries	0	77,918		
Youth indirect beneficiaries				

Adaptation Fund Core Impact Indicator "Natural Assets Protected or Rehabilitated"				
Date of Report	19/12/2024			
Project Title	Climate Change Resilience and Ecosystem Connectivity (CC-REC)			
Country	Lebanon			
Implementing Agency	IFAD			
Project Duration	4 years			
	Baseline	Target at project approval	Adjusted target first year of implementation	Actual at completion[179]
Natural Asset or Ecosystem *(type)*	Pasture (Degraded pastureland in critical climate-risk	Pasture (Degraded pastureland in critical climate-risk areas)		

[178] At project completion, the proponent could report on % targeted population reached or successfully supported (the absolute numbers could then be deduced from that figure)
[179] At project completion, the proponent could report on % targeted population reached or successfully supported (the absolute numbers could then be deduced from that figure)

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	areas)			
Change in state *Ha or km Protected/rehabilitated, or* *Effectiveness of protection/rehabilitation - Scale (1-5)*	0 Ha rehabilitated Effectiveness 0	60 Ha rehabilitated Effectiveness 4		
Natural Asset or Ecosystem *(type)*	Farmland (Restoration of abandoned agricultural terraces with secondary vegetation to act as fuel-break areas breaking continuity of very dense forests)	Farmland (Restoration of abandoned agricultural terraces with secondary vegetation to act as fuel-break areas breaking continuity of very dense forests)		
Change in state *Ha or km Protected/rehabilitated, or* *Effectiveness of protection/rehabilitation - Scale (1-5)*	0 Ha rehabilitated Effectiveness 0	20 Ha rehabilitated Effectiveness 4		
Natural Asset or Ecosystem *(type)*	Farmland (Agriculture waste management in olive/fruit tree/vineyard crops located in the interface with too dense forest stands)	Farmland (Agriculture waste management in olive/fruit tree/vineyard crops located in the interface with too dense forest stands)		
Change in state *Ha or km Protected/rehabilitated, or* *Effectiveness of protection/rehabilitation - Scale (1-5)*	0 Ha rehabilitated Effectiveness 0	490 Ha rehabilitated Effectiveness 4		
Natural Asset or Ecosystem *(type)*	Other (Hectares of freshwater ecosystems in critical flood-risk areas restored)	Other (Hectares of freshwater ecosystems in critical flood-risk areas restored)		

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Change in state *Ha or km Protected/rehabilitated, or* *Effectiveness of protection/rehabilitation - Scale (1-5)*	0 Ha rehabilitated Effectiveness 0	20 Ha rehabilitated Effectiveness 4		
Natural Asset or Ecosystem *(type)*	Forest	Forest		
Change in state *Ha or km Protected/rehabilitated, or* *Effectiveness of protection/rehabilitation - Scale (1-5)*	0 Ha rehabilitated (through pruning and thinning) Effectiveness 0	100 Ha rehabilitated (through pruning and thinning) Effectiveness 4		
Natural Asset or Ecosystem *(type)*	Cropland (Farmland under climate-smart regenerative agriculture)	Cropland (Farmland under climate-smart regenerative agriculture)		
Change in state *Ha or km Protected/rehabilitated, or* *Effectiveness of protection/rehabilitation - Scale (1-5)*	0 Ha rehabilitated Effectiveness 0	908 Ha rehabilitated Effectiveness 4		
Total number of natural assets or ecosystems protected/rehabilitated	0 Ha of natural assets or ecosystem rehabilitated	1598 Ha of natural assets or ecosystem rehabilitated		

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