ADAPTATION FUND BOARD SECRETARIAT TECHNICAL REVIEW OF PROJECT/PROGRAMME PROPOSAL

PROJECT/PROGRAMME CATEGORY: Regular Size Full Proposal

Country/Region: Armenia
Project Title: Enhancing the land-based adaptation of communities adjacent to arid zones and forest protected areas of Armenia by duplicating and expanding the successful mechanisms of the previous projects
Thematic Focal Area:
Implementing Entity: Environmental Project Implementation Unit (EPIU)
Executing Entities: Environmental Project Implementation Unit (EPIU)
AF Project ID: AF00000363
IE Project ID:
Requested Financing from Adaptation Fund (US Dollars): 3,780,513
Reviewer and contact person: Dirk Lamberts
Co-reviewer(s):
IE Contact Person: Rubik Shahazizyan, Milena Kiramijyan

Technical Summary	The project "Enhancing the land-based adaptation of communities adjacent to arid zones and forest protected areas of Armenia by duplicating and expanding the successful mechanisms of the previous projects" aims to reduce the climate risk vulnerability of local communities living adjacent to the "Khosrov Forest", "Dilijan" and "Lake Sevan" National Parks through promoting sustainable and climate-resilient agricultural practices in degraded areas and buffer zones, thereby reducing climate-related risks and vulnerabilities in production systems while sustaining protected areas. This will be done through the three components below: Component 1: Community based, climate smart agricultural practices in degraded areas and buffer zone (USD 1,948,500); Component 2: Strengthening value chains and climate smart technology transfer for vulnerable communities (USD 1,324,352); Component 3: Awareness raising, capacity building, monitoring and decision making for climate smart agricultural practices (USD 160,000). Requested financing overview: Project/Programme Execution Cost: USD 51,492

	Total Project/Programme Cost: USD 3,484,344 Implementing Fee: USD 296,169 Financing Requested: USD 3,780,513 The initial technical review raised several issues, such as climate change adaptation rationale, intervention effectiveness and compliance with AF GP and ESP, as was discussed in the number of Clarification Requests (CRs) and Corrective Action Requests (CARs) raised in the review. The second technical review found that the proposal has not addressed most of the CR and CAR requests. Namely, issues remained with climate change adaptation rationale, intervention effectiveness, compliance with AF GP and ESP and the IE functioning as EE. The third technical review found that several of the CR and CAR requests have not or not fully been addressed. Namely, issues remain with climate change adaptation rationale, intervention effectiveness, compliance with AF GP and ESP and the IE functioning as EE. The fourth technical review finds that several of the CR and CAR requests have not or not fully been addressed. Namely, issues remain with intervention effectiveness, compliance with AF GP and ESP, and the IE functioning as EE.
Date:	13 May 2024

Review Criteria	**Questions**	**Comments Initial Technical Review**	**Comments Third Technical Review (Jan. 2024)**	**Comments Fourth Technical Review (May 2024)**
Country Eligibility	1. Is the country party to the Kyoto Protocol or the Paris Agreement?	**Yes.**	**-**	**-**
	2. Is the country a developing country particularly vulnerable to the adverse effects of climate change?	**Yes.** The adverse effects of climate change involve in particular a rise in temperature, while the	**-**	**-**

		impact on precipitation and water resources is uncertain.		
Project Eligibility	1. Has the designated government authority for the Adaptation Fund endorsed the project/programme?	**Yes.** The duly signed endorsement letter is dated 21 August 2023.	-	-
	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.** The proposal consists of a project document of 73 pages and 39 pages of annexes. **CR 1:** Please rearrange the proposal so as to include all four sections of the project document before the annexes.	-	**No.** The proposal consists of 106 pages and 57 pages of annexes. **CR 1:** Please revise the proposal to comply with the page limitations. **EPIU Response** Issue addressed.
	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?	**Unclear.** The vulnerability to climate change impacts of the communities involved is described as the outcome of the combination of land and biodiversity degradation, marginal production systems and weak infrastructure, and lack of alternative livelihood opportunities. All these factors have historically developed and the associated weaknesses and challenges are and are	**CR 2: Not cleared.** Only a very small part of the budget (USD 40,000) is allocated to training and capacity building for local communities on sustainable grazing and developing incentive mechanisms. The proposal does not demonstrate that this limited effort has the potential of effectively leading to the required improved grazing management, a pre-	**CR 2: Not cleared.** No relevant changes were made to the proposal. **EPIU Response** It might be seen differently for the external perspective, but an Armenian market review can prove that 40,000$ are significant resources for the soft component of capacity building activities. We insist that sufficient level of efforts is budgeted and would like to

		expected to further be compounded by the impacts of climate change. There is no information on how the loss of biodiversity is a factor in this process. Clearly, overgrazing and inadequate management and protection of the protected areas are key elements. The activities of Component 1 all address issues related to poor grazing management without, however, approaching them from that perspective. Without improved grazing management, none of these proposed activities will be successful or sustainable. Yet, improving grazing management is only presented as a marginal outcome of the activities, rather than a precondition, requiring specific attention and resources. Some of the proposed activities could actually create disincentives for improved grazing management. **CR 2:** Please clarify how the activities of component 1 could be successful or	condition for effective and sustainable achievement of the project objectives. Please consider revising the project accordingly. **CR 3: Not cleared.** The climate change adaptation rationale presented in the proposal for a number of these activities remains unclear, and the cost-effectiveness and affordability of some of the proposed activities of Component 2 is questionable or conditional on external factors or additional investments. A detailed cost-benefit analysis for the activities of component 2 is needed. Please also justify the climate change adaptation rationale of the activities of Component 2 that are essentially just business-as-usual agriculture development activities, some potentially with climate change adaptation co-benefits. **CR 4: Not cleared.**	reconfirm EPIU's intention to avoid unjustified inflation of consultancy component of the budget and allocating the significant portion of the funds towards financing "hard" interventions. **CR 3: Partially cleared.** The climate change adaptation rationale has been clarified. For the cost effectiveness aspect, please see CR 6. **EPIU Response** Please see our response under the CR6. **CR 4: Not cleared.** No additional information has been provided in the proposal. The response in the review sheet corroborates the review finding of the need for adequately trained managers of the protected areas. The proposal does not show that the proposed activities will achieve that, nor how the outputs will be sufficient to establish the required management capacity, which goes far

		sustainable without at the same time significantly investing in improving grazing management. The activities of Component 2 include a broad mix of activities aimed at improving agriculture productivity and facilitating market and value chains access. For a number of these activities, the climate change adaptation rationale is unclear. The cost-effectiveness and affordability of some of the proposed activities of Component 2 is questionable. This is e.g. the case for the anti-hail nets, presumably to protect the production of fruit, with an investment cost of 40-50,000 USD per ha. Without efficient marketing pathways and/or proper long-term storage facilities for this fruit it is very unlikely that this investment is affordable or cost-effective. **CR 3:** Please justify the climate change adaptation rationale of the activities of Component 2 that are	Component 3 focuses on building awareness, capacity and decision-making abilities among local stakeholders regarding climate-smart agricultural practices. The protected areas and their restrictions are key elements in determining the adaptive capacity of the adjacent communities. The managers of the protected areas are included as stakeholders in this project, but it is unclear if or to which extent that will adequately address management capacity, which goes far beyond just management personnel.	beyond just management personnel. **EPIU Response** Keeping up to the logic rationale elaborated on under the CR2 response, we would like to reconfirm that the budgeted efforts are sufficient and concordant with the capacity building needs. Moreover, managers of the protected areas are engaged into the long term capacity building activities coordinated by the Ministry of Environment, so there is no need to put entire burden on the budget of the project.

		essentially just business-as-usual agriculture development activities. Component 3 focuses on building awareness, capacity and decision-making abilities among local stakeholders regarding climate-smart agricultural practices. The managers of the protected areas are notably absent in this project, whilst it is clear from the proposal that the protected areas and their restrictions are key elements in determining the adaptive capacity of the adjacent communities. **CR 4:** Please clarify how the capacity of the protected areas management will be supported as a key element in developing and improving climate change adaptation capacities.		
	4. Does the project / programme provide economic, social and environmental benefits, particularly to vulnerable communities, including gender	**Unclear.** The economic, social and environmental benefits the project claims to generate are listed but for a number of those claims there is little or no substantiation provided that supports those claims.	**CR 5: Not cleared.** The required justifications and substantiation for the anticipated project benefits have not been provided.	**CR 5: Partially cleared.** The agroforestry benefits claims have been removed. The response clarifies that marginalized and vulnerable groups only will be identified through detailed mapping during project

	considerations, while avoiding or mitigating negative impacts, in compliance with the Environmental and Social Policy and Gender Policy of the Fund?	This is in particular the case for the gender-related benefits as well as those for vulnerable groups (that have not been identified). Also, the potential of economic benefits from the development of agro-tourism would benefit from clarification, in particular for those project areas not near the Sevan lake. **CR 5:** Please provide further substantiation for the benefits the project is expected to provide.		implementation. The proposal includes no such mapping activities. Nevertheless, the proposal concludes for the ESP principle of Marginalized and Vulnerable Groups that the project activities have no negative impacts (which would have required prior identification of these groups). Please revise the proposal to include identification of marginalized and vulnerable groups as a project activity and updating of sections II.K and III.C accordingly. **EPIU Response** There are two critically important aspects that we are willing to clarify. Firstly, as mentioned above, we would like to highlight that EPIU's approach is to reasonably minimize these type of costs. More specifically, identification of the particularly vulnerable population is something that will be done as a part of each specific assignment (under specific output) and coordinated by EPIU with the respective municipalities.

				Secondly, a review of the country-specific context can witness that more than two thirds of the population in the beneficiary municipalities are vulnerable. Such a background eliminates the need to further advance the part related to the marginalized and vulnerable groups. **This has also been explained in the details to the reviewer during the call.**
	5. Is the project / programme cost effective?	**Unclear.** The analysis of the cost effectiveness of the project relies on a number of elements that are not included in the description of the activities such as "the amplification of impacts through training trainers and community champions". The relevant section of the proposal does not include a complete cost effectiveness analysis which should include cost per component, the cost of alternative options, and a comparison of the cost to the expected benefits. The alternative options presented in most	**CR 6: Not cleared.** The relevant section of the proposal is still qualitative only and does not include a complete cost effectiveness analysis which should include cost per component, the cost of alternative options, and a comparison of the cost to the expected benefits. The alternative options presented in most cases are not actual alternatives.	**CR 6: Not cleared.** The only alternative options presented are those of no-project. A few figures have been added but there is no substantiating information. **EPIU Response** This part has been further advanced and wherever possible changed. Please refer to the revised Table 1. – "Benefits from proposed interventions, alternatives and reasons for not adopting".

		cases are not actual alternatives. **CR 6:** Please clarify the cost effectiveness of the project, with quantitative estimates where feasible and useful.		
	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?	**Unclear.** The proposal identified relevant plans and strategies but does not describe how it is consistent with these instruments beyond general claims of consistency. **CR 7:** Please clarify how the project is consistent with the identified strategies and development plans.	**-**	**-**
	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.** The proposal does not present the national technical standards that apply to the project activities. **CAR 1:** Please identify the national technical standards that apply to the project activities and describe how the project will comply with these.	**CAR 1: Not cleared.** There is no information on standards for agriculture produce and food or how the project will comply with these.	**CAR 1: Partially cleared.** The proposal now includes a reference and brief description of five relevant laws, and a statement that compliance with these laws will be ensured. However, it does not explain *how* the project will meet the relevant national technical standards included in these laws.

				EPIU Response The main legal regulations that can be related to the Project components are added in Section E of the Proposal. Please note that more precise RA legislation requirements and the respective arrangements to ensure compliance with the latter could be identified as soon as the detailed information on exact locations, boundaries, capacities and other specifics are available during the inception stage of the project implementation.
	8. Is there duplication of project / programme with other funding sources?	**Unclear.** The proposal does not address how the design of the proposal ensures that there is no duplication with other ongoing or planned projects. **CR 8:** Please provide an overview of other ongoing or planned projects/programmes in the project areas with which there may be duplication of funding.	**CR 8: Not cleared.** The proposal does not address how the design of the proposal ensures that there is no duplication with other ongoing or planned projects. There is no overview of ongoing or planned projects/ programmes in the project area.	**CR 8: Cleared.** As per additional information provided on Part II Section F pages 48-51.
	9. Does the project / programme have a	**Yes.**	**-**	**-**

	learning and knowledge management component to capture and feedback lessons?	Much of the activities of component 3 are geared towards learning and knowledge management.		
	10. Has a consultative process taken place, and has it involved all key stakeholders, and vulnerable groups, including gender considerations in compliance with the Environmental and Social Policy and Gender Policy of the Fund?	**Unclear.** The information provided on the consultations held is overall aspecific, and certain key stakeholders are lacking. This relates to the managers of the protected areas and the vulnerable and marginalized groups that have not been identified. The information provided as Annex 1 (p. 72-110) provides much detail on the wishes of the stakeholders consulted but does not provide information on consultation on the final project design. **CR 9:** Please clarify how marginalized and vulnerable groups were identified and how they were included in the consultation. **CR 10:** Please clarify that the managers of all the protected areas were consulted on the project design, including the	**CR 9: Not cleared.** **CR 10: Not cleared.**	**CR 9: Not cleared.** Please see CR 5. **EPIU Response** Addressed above. **CR 10: Not cleared.** Please address CR10. **EPIU Response** Addressed above.

		identification of environmental and social risks, and report on the outcomes of the consultations.		
	11. Is the requested financing justified on the basis of full cost of adaptation reasoning?	**Unclear.** The relevant section of the proposal describes how the project is justified based on the full cost of adaptation reasoning. However, a key cause of the adaptation needs for the communities involved – and for the broader region – is that of poor grazing management, which is notably absent from the proposal. **CR 11:** Please clarify how the issue of overgrazing, which is a vital element of building adaptive capacity, is being addressed, and how the project financing is justified from a full cost of adaptation reasoning, including addressing the issue of overgrazing.	**CR 11: Not cleared.** Improved grazing management is a pre-condition for effective and sustainable achievement of the project objectives. The proposal does not demonstrate that it provides the required resources to achieve this.	**CR 11: Not cleared.** No additional relevant information has been provided. **EPIU Response** This is already addressed above.
	12. Is the project / program aligned with AF's results framework?	**Yes.**	**-**	**-**

	13. Has the sustainability of the project/programme outcomes been taken into account when designing the project?	**Yes.** However, there are some elements that require clarification, such as on maintenance of project outputs. **CR 12:** Please clarify how project outputs, such as improved field tracks, will not lead to further unsustainable grazing in newly accessible areas.	**CR 12: Not cleared.** Please ensure that the clarifications include the provisions for maintenance of the relevant project outputs, once the project has ended.	**CR 12: Partially cleared.** The added clarifications state that the required skills and expertise to maintain project outputs after project completion will be built, but provides no indication of funding, e.g. for the maintenance of the roads that will be rehabilitated. **EPIU Response** Respective sentence stating that maintenance of the field tracks will be carried out by municipalities has been added in the respective section of the proposal.
	14. Does the project / programme provide an overview of environmental and social impacts / risks identified, in compliance with the Environmental and Social Policy and Gender Policy of the Fund?	**Yes.** However, there are issues with the risks identified. 1. The table in section II.K states that further assessments are still required. The final sentence of this section states that "comprehensive and thorough risk identification, mitigation, and prevention strategy, including the formulation of an Environmental and Social Management Plan, will be detailed in the meticulously	**CAR 2: Not cleared.** The proposal contains no information that environmental and social impacts have been assessed for the risks identified. An ESMP has been added to the proposal. However, it is unclear to what extent it has been developed based on effective impact assessments rather than generic risks identification. It is generic and lacks	**CAR 2: Not cleared.** The only improvement to the proposal on this subject is the addition of an annex with a generic country-level gender analysis. None of the other issues have been addressed. **EPIU Response** The statement on the generic nature of the gender analysis is not acceptable since a proper case-based exercise has been conducted.

		developed project proposal." At this stage of a proposal, all risks should have been identified and impacts assessed as needed. 2. Specific issues with some of the identified risks: i) as land and soil conservation are project objectives, no risks under the Lands and Soil Conservation principle are said to exist. Nevertheless, several of the project activities, including those targeting land degradation, have inherent risks of lands and soil degradation; ii) gender equality and women's empowerment: at this stage a Gender Assessment should have been carried out to identify risks and impacts on gender equality as well as opportunities to promote women's empowerment. However, no information is provided on a gender assessment, and the design of a gender action plan is announced; iii) protection of natural habitats and conservation of biodiversity: considering the	integration with the project implementation arrangements. The grievance mechanism includes provisions for IE involvement that are incompatible with its role as EE. The response sheet states that a gender assessment has been carried out and has been annexed to the proposal. The 4-page annex on p. 135 of the proposal is entitled 'Initial Gender Analysis'. Most of the gender mainstreaming activities that are announced in this annex are rather generic, and are not or only to a limited extent reflected in the description of the project activities. It is unclear why there is a reference to an outdated UNDP gender equality strategy. The same applies to the "Initial study plan and analysis". A gender assessment has not been carried out, but is announced. The proposal has no provisions for a gender assessment, which should be carried out and the	**Respective clarifications were made during the call with AF representative and reviewer.** There are several elements that raise further doubts about the adequacy of the risks identification and subsequent impact assessment. E.g., the risks findings for the ESP principle on Pollution prevention and resource efficiency are verbatim identical to that for the 'Artik city closed stone pit waste and flood management pilot project'. The same applies to several other principles. Nevertheless, the impact findings are stated to be based on "an extensive and meticulous impact assessment" (p. 76). **EPIU Response** This part has been fully reworked in the proposal. **Respective clarifications were made during the call with AF representative and reviewer.**

		proximity of the project sites to protected areas, these risks cannot be excluded and an impact assessment should have been carried out; iv) pollution prevention: the agriculture value chains will certainly produce waste and may lead to other forms of pollution. A waste management plan should be part of the ESMP; v) compliance with the law: please also see CAR 1. **CAR 2:** Please complete the risks identification for all the activities and for all the AF ESP principles, and provide a brief justification of the findings in section II.K. Include an ESMP as needed.	proposal updated accordingly.	**CR 20 (NEW):** Please provide the secretariat with the environmental and social impact assessments that were carried out for this project. **EPIU Response** Please refer to the answer to the CAR 4 below. **Respective clarifications were made during the call with AF representative and reviewer.**
Resource Availability	1. Is the requested project / programme funding within the cap of the country?	**Yes.**	-	-
	2. Is the Implementing Entity Management Fee at or below 8.5 per cent of the total project/programme budget before the fee?	**Yes.** The implementing Entity Management Fee is at 8.5 per cent of the total project cost.	-	-

	3. Are the Project/Programme Execution Costs at or below 9.5 per cent of the total project/programme budget (including the fee)?	**Yes.** The Project Execution Costs are at 1.5 per cent of the total project budget. This is in line with the cap on execution costs for projects where the IE is also providing execution services. The IE is also the only Executing Entity for the project. The Endorsement Letter by the DA states that EPIU will execute the project but provides no rationale for this request. The responsibility for these services is not stipulated. **CAR 3:** Please provide a justification for the IE to provide execution services, and indicate the responsibility for these services, in line with OPG Annex 7 (https://www.adaptation-fund.org/wp-content/uploads/2017/11/OPG-ANNEX-7-Project-Programme-Implementation-Approved-Oct-2017.pdf)	**CAR 3: Not cleared.** The written request specified in OPG Annex 7 has not been provided. Please also see CAR 6.	**CAR 3: Not cleared.** A letter from the DA / Minister of Environment has been provided, confirming that the IE will also serve as EE. Since the previous review, a concept note submitted by EPIU has been endorsed by the AF Board (AF0368), also with the IE as EE. For both ongoing AF projects implemented by the IE, its parent ministry is the EE, and execution costs have been limited to 1.5 per cent. So far, all projects submitted by the IE involve either its parent ministry or itself as EE. Approval for an IE to assume EE functions is only possible on an exceptional basis. **EPIU Response** It should be understood that the "exceptional" nature of the request is substantiated by the facts that there are no properly qualified EEs in the targeted regions that can ensure proper implementation of the project's activities, as well as budgeted funds make this unrealistic to engage such

				entities even if they are available.
Eligibility of IE	1. Is the project/programme submitted through an eligible Implementing Entity that has been accredited by the Board?	**Yes.**	**-**	**-**
Implementation Arrangements	1. Is there adequate arrangement for project / programme management, in compliance with the Gender Policy of the Fund?	**Unclear.** The IE is also acting as sole EE for the project. **CR 13:** Please clarify how oversight of project execution will be provided by the IE, taking into account its role in project execution.	**CR 13: Not cleared.** No clarification was provided.	**CR 13: Not cleared.** No clarification was provided. **EPIU Response** The project steering committee that is described in the proposal is the most efficient instrument.
	2. Are there measures for financial and project/programme risk management?	**Yes.** However, with the IE assuming the role of EE, additional provisions may be required for the adequate and effective oversight of project execution. **CR 14:** Please clarify how the performance of the IE as EE will be subject to oversight.	**CR 14: Not cleared.** No clarification was provided.	**CR 14: Not cleared.** No clarification was provided. **EPIU Response** Same as above.

	3. Are there measures in place for the management of for environmental and social risks, in line with the Environmental and Social Policy and Gender Policy of the Fund?	**No.** The environmental and social risks described in the relevant section need to be aligned with those identified in section II.K. **CAR 4:** Please provide an overview of the measures for the management of the environmental and social risks of the project activities, in line with those identified in II.K, as reflected in the ESMP.	**CAR 4: Not cleared.** An ESMP has been added to the proposal. However, it is unclear to what extent it has been developed based on effective impact assessments rather than generic risks identification. It is generic and lacks integration with the project implementation arrangements. The grievance mechanism includes provisions for IE involvement that are incompatible with its role as EE, which should be addressed. The ESMP summary in the proposal document should be updated with the outcomes of the environmental and social impacts assessment, as well as with that of the gender assessment.	**CAR 4: Not cleared.** Please also see CAR 2. **EPIU Response** Environmental and Social action planning added showing what kind of actions/measures shall be considered in the further stages of the Project, when the ESMP will be developed. **Respective clarifications were made during the call with AF representative and reviewer.**
	4. Is a budget on the Implementing Entity Management Fee use included?	**Yes.** A budget on the use of the IE Management Fee is included. However, there is a discrepancy between the fee as presented in the budget on the use of the IE Management Fee and in the overall budget.	**CAR 5: Not cleared.** The budget on the Implementing Entity Management Fee use contains errors.	**CAR 5: Not cleared.** There is a discrepancy between the fee as presented in the budget on the use of the IE Management Fee and in the overall budget. **EPIU Response**

		CAR 5: Please ensure consistency in the proposal on the IE Management Fee amount.		Addressed.
	5. Is an explanation and a breakdown of the execution costs included?	**Yes.** The budget includes a breakdown of the execution costs. However, it is unclear how the execution costs listed at these low amounts will be adequate for the execution of the project. **CR 15:** Please clarify how the execution costs will adequately cover the direct costs for the administration of the day-to-day activities of project.	**CR 15: Not cleared.** It remains unclear how the execution costs listed at these low amounts will be adequate for the execution of the project. Other execution costs have been included in provisions for fees for external experts. An overview of the execution costs by project component should be provided and the proposal should clarify how the budget allocation for execution costs will adequately cover these direct costs for the administration of the day-to-day activities of project.	**CR 15: Not cleared.** The matter has not been addressed. **EPIU Response** This issue is addressed above.
	6. Is a detailed budget including budget notes included?	**Yes.** A detailed budget with budget notes is presented. It reveals some activities that are not mentioned elsewhere in the proposal and for which there seems to be no justification or direct link with the output (e.g. the	**CR 16: Cleared.** **CAR 6: Not cleared.** The budget contains errors. Activities unrelated to the project have not been justified or removed.	**CAR 6: Not cleared.** The matters have not been addressed. **EPIU Response** Staff and experts of the agro-accelerators (unlike arbitrary stated in the comment) are not project staff but

		establishment of recreational parks under output 1.1 which is aimed at installing irrigation water supply). Output 1.7 includes detailed designs, presumably for the other outputs of component 1. This cost should be included in the relevant outputs. Output 2.7 includes provisions of USD 100,000 for the renovation of premises for the agro-accelerators. **CR 16:** Please clarify who the beneficiaries/owners of these premises are. The same output has provisions for USD 90,000 for Staff and experts for agro-accelerators, who are considered project staff, and thereby their salaries should be covered by the execution fees. **CAR 6:** Please remove project execution expenses from the project activities.	Output 1.7 includes detailed designs, presumably for the other outputs of component 1. This cost should be included in the relevant outputs.	independent service providers.

	7. Are arrangements for monitoring and evaluation clearly defined, including budgeted M&E plans and sex-disaggregated data, targets and indicators, in compliance with the Gender Policy of the Fund?	**No.** The arrangements for monitoring and evaluation hinge on the PMU. It is not until the project inception workshop that defining roles, responsibilities, and functions of both the NIE and the Project Management team will happen. Additionally, the M&E indicators, budget, and work plan will be collaboratively agreed upon and scheduled. A budgeted M&E plan compliant with the AF M&E guidelines is included. It contains no gender elements. Provisions for mid-term and terminal evaluations are included. **CAR 7:** Please include arrangements for M&E, including sex-disaggregated data, even if they are still subject to the project inception.	**CAR 7: Not cleared.** The arrangements for monitoring and evaluation are limited to a statement of intent of what will be developed during the inception phase of the project. The "predefined targets and indicators" (p. 72) that will be used for monitoring and evaluation will still be subject to the project launch workshop, during which "the M&E indicators, budget, and work plan will be collaboratively agreed upon and scheduled". A monitoring system will be established by the PMU. Clearly defined arrangements for monitoring and evaluation are still lacking.	**CAR 7: Not cleared.** The matter has not been addressed. **EPIU Response** The depth of the provided information is sufficient for the proposal level. Firstly, the overall structure is defined and, secondly, all important indicators are described in detail. The following will be addressed by the monitoring and evaluation plan that will be designed during the Project's inception stage.
	8. Does the M&E Framework include a break-down of how implementing entity IE fees will be utilized in the	**Yes.** A budgeted M&E Plan is provided with a breakdown of the IE fees for supervision of the M&E function.	-	-

	supervision of the M&E function?			
	9. Does the project/programme's results framework align with the AF's results framework? Does it include at least one core outcome indicator from the Fund's results framework?	**Unclear.** The proposal includes a results framework with quantified expected results with indicators and targets that are gender responsive and to some extent disaggregated by sex. However, the results framework includes a column titled "Baseline", which is explained in a footnote as "Achieved in the result of implementation of the pilot Project". **CR 17:** Please clarify the meaning and relevance of the 'Baseline' figures in the results framework. Gender targets are set between 30 and 80 per cent women, with the overall target of 40 per cent of beneficiaries being women. In the absence of a gender assessment, it is unclear how these differentiated targets were set and to what extent they comply with the AF GP.	**CR 17: Not cleared.** The beneficiary numbers should only include those that will directly or indirectly benefit from the requested funding for this project (and not the pilot). Gender targets are set at between 30 and 80 per cent women, with the overall target of 40 per cent of beneficiaries being women. In the absence of a gender assessment, it is unclear how these differentiated targets were set and to what extent they comply with the AF GP. **CR 18: Not cleared.** The proposal does not clarify how the gender targets comply with the AF GP. **CR 19: Not cleared.** The project results framework includes the mandatory core impact indicator "Number of beneficiaries including	**CR 17: Not cleared.** The response sheet states that "a Comprehensive Gender Assessment and Action Plan" has been included, but that is not the case. Please also see CAR 2. **EPIU Response** The Gender Assessment and Action Plan with the necessary for the Project Proposal level details is attached. **CR 18: Not cleared.** The response sheet states that "a Comprehensive Gender Assessment and Action Plan" has been included, but that is not the case. Please also see CAR 2. **EPIU Response** The Gender Assessment and Action Plan with the necessary for the Project Proposal level details is attached.

		CR 18: Please clarify the gender targets, and how these comply with the AF GP. Other indicators included in the results framework are unclear, like e.g. "**%** of vulnerable settlements benefited". **CR 19:** Please clarify the indicators in the results framework in consistency with the project activities. The project result framework includes the mandatory core impact indicator "Number of beneficiaries including estimations for direct and indirect beneficiaries". However, it is unclear if this number of 36,000 includes those indicated in the "Baseline" column. The number of beneficiaries is not disaggregated between direct and indirect beneficiaries. **CAR 8:** Please include in the results framework indicators as required in line with the AF result framework.	estimations for direct and indirect beneficiaries". The number of beneficiaries is not disaggregated between direct and indirect beneficiaries. **CAR 8: Not cleared.**	**CR 19: Not cleared.** The Gender analysis annex includes some numbers on direct and indirect beneficiaries but these are not reflected in the results framework. **EPIU Response** These are reflected in the Gender Action Plan. **CAR 8: Not cleared.** The matter has not been addressed. **EPIU Response** The comment is unclear. Indicators are presented in the manner required. Moreover, while elaborating on the alignment with the AF results framework we've reviewed number of other proposals approved by AF Board and verified that our approach is compliant with the AF requirements.

	10. Is a disbursement schedule with time-bound milestones included?	**No.** No disbursement schedule is included. **CAR 9:** Please include a disbursement schedule with time-bound milestones.	**CAR 9: Not cleared.** A disbursement schedule with time-bound milestones is included, but it contains errors. It does not correspond to the detailed budget. The disbursement schedule should be coherent and consistent with other relevant parts of the proposal.	**CAR 9: Partially cleared.** The disbursement schedule does not correspond to the detailed budget. **EPIU Response** Corrected

FULLY DEVELOPED PROPOSAL FOR SINGLE COUNTRY

PART I: PROJECT/PROGRAMME INFORMATION

Title of Project/Programme:	Enhancing the Land-based Adaptation of Communities Adjacent to Arid Zones and Forest Protected Areas of Armenia by Duplicating and Expanding the Successful Mechanisms of the Previous Project
Country:	Republic of Armenia
Type of Implementing Entity:	National Implementing Entity
Implementing Entity:	**"**Environmental Project Implementation Unit" State Agency
Executing Entities:	**"**Environmental Project Implementation Unit" State Agency
Amount of Financing Requested:	**3,780,513** (in U.S Dollars Equivalent)
Letter of Endorsement (LOE) signed:	Yes ☒ No ☐

Stage of Submission:

☐ This proposal has been submitted before including at a different stage (concept, fully-developed proposal)

☒ This is the first submission ever of the proposal at any stage

In case of a resubmission, please indicate the last submission date: Click or tap to enter a date.

Project/Programme Background and Context:

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

Project's economic social, development and environmental context

Introduction

Given its geographical location in the South Caucasus, Armenia is highly susceptible to the compounding effects of climate change and land degradation. Its mountainous terrain, fragile ecosystems, and agricultural-based economy make it particularly vulnerable. With a population of approximately 3 million people, the livelihoods and economies of the country are at risk. Over the past 90 years, climate trends have shown a significant warming pattern, leading to drier summers and an increase in extreme events such as hailstorms. Projections indicate that these trends will continue and significantly impact marginal production areas. Crop and livestock production has already declined in some regions, and without additional climate adaptation measures, this decline is expected to persist.

Communities located near protected areas and forests, such as Khosrov Forest State Reserve and Dilijan National Park, face heightened vulnerability. These areas experience constant pressure on their remaining land and pasture resources, lack robust rural infrastructure, and suffer from a dearth of alternative income opportunities. The current capacity to adapt to a changing climate and its escalating impacts on rural livelihoods and production systems is limited. Therefore, concerted efforts are needed to address the complex challenges posed by both land degradation and climate change on rural livelihoods.

The rural areas adjacent to "Lake Sevan National Park" in Armenia confront a set of challenges due to their proximity to this vital freshwater ecosystem. One of the foremost challenges lies in the management and conservation of the lake itself. Lake Sevan faces various ecological issues such as water pollution, overfishing, and the impact of climate change, which have repercussions on the livelihoods of the communities living nearby.

Another pressing challenge arises from the reliance of these rural areas on the lake's resources. Fishing and tourism related to Lake Sevan contribute significantly to the local economies. However, overexploitation of fish stocks, coupled with environmental degradation, can threaten the sustainability of these livelihoods. Furthermore, the vulnerability of these communities is amplified by their limited access to alternative income sources, making it imperative to implement adaptive measures that not only address the challenges posed by the lake's ecosystem but also foster economic diversification and resilience in these rural areas bordering Lake Sevan.

Country Context

Armenia is a land-locked country within the Caucasus region between Europe and Asia. The majority of the country is at high altitude (greater than 1,000 meters above sea-level),

including a freshwater Lake Sevan, with a surface area of 1,279 km^2 and the Seven River Basin with a surface area of 4,721 km^2, spans approximately one sixth of the nation's total land area. As of 2022, Armenia's population was estimated at 2.78 million people[1] and its GDP at $ 19.5 billion[2]. Around one third of the nation's population lives in its capital city, Yerevan[3].

Over the past decade, Armenia has transitioned from an industry-dominated to a service-dominated economy. As of 2016, the service sector constituted 48.8% of the labor force. Agriculture remains a major employer with a labor market share of 35.3% and there remains a relatively high rate of unemployment (18%) as well as net out-migration. GDP is distributed less evenly than employment, with around 52,8% originating in the service sector, 26,64% in the industry and only 11,34% in agriculture. Poverty persists, affecting around 26,5% (2021 data) of the population based on the national poverty line[4].

Gender disparity in Armenia, like in many other countries, is influenced by a complex interplay of social, cultural, and economic factors. While Armenia has made significant progress in improving gender equality, particularly in urban areas and on the policy level, gender disparities still persist and are broadly comparable with those in Europe and Central Asia and better than those of lower-middle-income countries globally. These disparities are often rooted in deep-seated social norms and traditional gender roles that continue to shape the lives of women and men.

Deeply ingrained social norms and patriarchal structures persistently hinder women's active involvement in the economy, resulting in both the misallocation and underutilization of their valuable skills and talents. These barriers manifest in various ways, such as the tendency for women to be concentrated in specific job sectors, the unequal distribution of women in certain fields of study at the university level, a decline in female labor force participation during their childbearing years, and the notable absence of women in key leadership roles in both politics and entrepreneurship. Furthermore, the practice of gender-based sex selection, which favors male offspring, carries significant demographic and economic implications.

Efforts to address gender disparities in Armenia's regions require a multi-faceted approach that goes beyond policy changes and legal reforms. It involves challenging deeply ingrained stereotypes and promoting more inclusive and equitable attitudes and behaviors at the community level. This can be achieved through educational programs, awareness campaigns, and initiatives that empower women to become active participants in economic, social, and political life while engaging men and boys as allies in the journey towards gender equality.

Agriculture has long been the foundation of Armenia's economy. Although its contribution to GDP has decreased from 26% in 2000 to 18% in 2016, it remains the dominant employer, with 44.2% of the population engaged in the sector. The majority of Armenia's population is economically disadvantaged, and their livelihoods are highly susceptible to fluctuations in the agricultural industry. Notably, there is a gender disparity within the

[1] World Bank data portal - Armenia
[2] World Bank data portal - Armenia
[3] Republic of Armenia – Fourth National Communication on Climate Change to the UNFCCC
[4] "Armenia – Country Risk Climate Profile", joint publication by World Bank and Asian Development Bank, 2021

sector, with 82.1% of informal agricultural workers being women, who also face a significant gender wage gap, earning approximately 65.9% of what men earn on average (FAO, 2017). Furthermore, land ownership and management are predominantly male dominated, limiting women's access to land resources. Additionally, women encounter obstacles in acquiring agricultural technical knowledge and participating in training programs. These conditions underscore the critical role of agriculture in Armenia's economy and the importance of addressing gender disparities within the sector to promote inclusive and sustainable economic development.

Armenia's agricultural sector primarily revolves around subsistence farming, although any surplus production is sold in the market. Presently, the sector falls short of fulfilling the country's food requirements and still relies on government subsidies. The household farms sector, encompassing a substantial number of small-scale farms, rural and urban household farming, and gardening enterprises, is responsible for producing more than 90% of Armenia's agricultural output. The predominant agricultural system in Armenia is mixed farming, where both crop cultivation and livestock rearing hold significant importance. However, it's noteworthy that the relative dominance of crops or livestock can vary by region. It's important to recognize that due to differences in soil quality, climate, and access to water, many areas in Armenia, especially those at higher elevations, are unsuitable for high-value vegetable cultivation. Consequently, these regions tend to focus on the production of more resilient and less input-intensive crops like wheat, maize, and forage.

Armenia boasts remarkable and globally significant biodiversity, with forests covering 11.2% of its territory. However, due to extensive human activities, Armenia's natural landscapes have experienced significant anthropogenic alterations. Overexploitation has led to pollution, diminishing wild biodiversity, habitat loss for various species, and transformations in ecosystem services. Presently, the Republic of Armenia has designated three reserves, four national parks, and 27 sanctuaries, restricting the utilization of natural resources by local communities. This limitation has implications for the residents of nearby communities, as their access to land and water resources is restricted, consequently increasing both human and natural pressures on ecosystems near these communities. As a result, the gradual degradation of natural ecosystems in proximity to these communities diminishes their ability to adapt to the changing climate, further exacerbated by shifting climate conditions, including rising temperatures, decreased precipitation, and increased occurrences of floods and hailstorms, which all contribute to reduced agricultural productivity.

Land degradation emerges as a significant factor amplifying vulnerability to climate change and, through the loss of soil organic carbon, as a contributor to climate change itself. The degradation of land and the diminishing resilience of agro-ecological systems to climate change are intertwined. Armenia's "National Strategy and Action Program to Combat Desertification in the Republic of Armenia" from 2015 recognizes both natural and anthropogenic desertification factors. Natural factors comprise frequent droughts in the Ararat valley and specific areas of Vayots Dzor and Syunik regions, frequent sandstorms observed in the Ararat valley, Vayots Dzor, and Syunik regions, moisture deficits resulting from uneven seasonal and regional rainfall distribution, as well as landslides and floods, along with salinization. Anthropogenic factors encompass urban expansion, agricultural practices, the absence or inappropriate application of crop rotation

techniques, inefficient use of irrigation water and nutrients, overgrazing of pastures, road construction, illegal logging, and soil contamination. Water erosion affects nearly half of the cropland and forested areas, comprising 220,000 hectares and 186,200 hectares, respectively, while overgrazing affects approximately 170,000 hectares. Armenia has committed to achieving land degradation neutrality in its Land Degradation Neutrality National Strategy, an ambitious and voluntary goal that this project contributes to. It is estimated that interventions encompassing 407.5 square kilometers require an investment of US$ 210 million until 2040 to address these pressing land degradation issues.

Country overview

Armenia is a land-locked country within the Caucasus region between Europe and Asia. The majority of the country is at high altitude (greater than 1,000 meters above sea-level), including a freshwater Lake Sevan, with a surface area of 1,279 km^2 and the Seven River Basin with a surface area of 4,721 km^2, spans approximately one sixth of the nation's total land area. As of 2022, Armenia's population was estimated at 2.78 million people[5] and its GDP at $ 19.5 billion[6]. Around one third of the nation's population lives in its capital city, Yerevan[7].

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Climate baseline

Overview

Armenia's climate can be described as highland continental, with large variation between summer highs (June to August) and winter lows (December to February). The country also experiences large climatic contrasts because of its intricate terrain, and the climates range from arid to sub-tropical and to cold, high mountains. Summer highs in Armenia's capital Yerevan average around 30°C−33°C while the average in winter is 1°C−3°C. The more mountainous regions experience lower average temperatures and prolonged periods of snow cover. The average annual precipitation is low at 526 mm. Precipitation intensity is greater in Armenia's high-altitude regions with May and June the wettest months. For Armenia, altitude is the strongest controlling factor determining the spatial distribution of temperatures and precipitation in Armenia. Sub-zero average temperatures are common in Armenia's mountain ranges while its highest average temperatures are experienced in the relatively low-lying western plains. Similarly, Armenia's highest peaks may receive up to 1,000 mm of annual precipitation while

[5] World Bank data portal - Armenia
[6] World Bank data portal - Armenia
[7] Republic of Armenia – Fourth National Communication on Climate Change to the UNFCCC
[8] "Armenia – Country Risk Climate Profile", joint publication by World Bank and Asian Development Bank, 2021

precipitation can be as low as 200 mm in the western plains.

Due to the sharply intersected relief and the development of the slope processes, Armenia is characterized by active external processes. High frequency and magnitude of hazardous hydrometeorological phenomena (HHP) are characteristic for Armenia, which trigger droughts, landslides, mudslides, forest fires etc. and inflict significant losses to the population and the economy[9].

Key trends

Temperature - Armenia's NC4 reports that it experienced an average temperature rise of 1.23°C between 1929–2016. This historical rise in temperatures has resulted in the rapid shrinking of the glaciers in Armenia's mountain regions, with spatial extents retreating at around 8 m per year. Trends suggest climate variability is increasing and in 2018, Yerevan experienced a new record July temperature, reaching 42°C.

Precipitation - Armenia's NC4 reported a 10% reduction in average annual precipitation volume was documented over the period 1935–2012. The spatial distribution of precipitation changes is irregular: the northeast and central regions have become more arid. However, precipitation has increased in the southern and northwestern regions and in the western region of the lake Sevan basin. Additionally, the number of days with heavy rainfall and hailstorms has increased.

Climate future

Temperature

The model ensemble's[10] estimate of average warming in Armenia under the highest emission pathway is an average temperature increase of 2.8°C by the 2050s and 5.8°C by the 2090s. Ensemble estimates of warming under the lowest emission pathway also present an average temperature increase of 1.2°C by the 2050s and maintain through the end of the century. Both of these temperature increases represent greater rates of increase than the global average. By the 2090s, temperatures are projected to have increased around 35% to 40% higher than the global average. Under all scenarios, except for the lowest emission pathway, the number of summer days is expected to increase, and the number of frost and ice days are expected to fall dramatically by the end of the century.

In the case of Armenia, the rate of warming in maximum temperatures, is 5.8°C by the 2090s, which is notably faster than the warming in monthly average temperature. This points towards an increase in the intensity of temperature extremes and is among the some of the largest margins of warming projected anywhere on Earth. The seasonality of future temperature changes holds some uncertainty on lower emissions pathways. However, projected warming is strongest in the summer months from June to September. The months of July, August, and September are projected to see around 50% faster warming than the winter months from November to April under the highest

[9] National Action Program of Adaptation to Climate Change and the List of Measures for 2021-2025
[10] Climate projections referred are derived from datasets available through the WB's Climate Change Knowledge Portal. These datasets are processed outputs of simulations performed by multiple General Circulation Models (GCM).

emissions pathway.

Precipitations

While considerable uncertainty surrounds long-term projections in regional precipitation trends, global trends are evident. The intensity of sub-daily extreme rainfall events appears to be increasing with temperature, a finding supported by evidence from different regions of Asia. However, as this phenomenon is highly dependent on local geographical contexts further research is required to constrain its impact in Armenia. For Armenia, additional uncertainty remains around future changes in average annual precipitation, as well as for changes in seasons. Model ensemble estimates are not statistically significant across all emissions pathways. However, the trend indicated, which is consistent with historical climate behavior and most models, is towards a decline in average monthly precipitation. Under all emissions pathways, an increase in the precipitation associated with a maximum 5-day rainfall event is expected more predominantly in the northern and eastern areas of Armenia. Under all emissions pathways, precipitation reductions are projected in the western regions, and under lower emissions pathways reductions are also expected in the arid northern regions. These changes match global trends, which suggests the intensity of sub-daily extreme rainfall will increase as temperatures increase, a finding supported by evidence from different regions of Asia.

Climate related natural hazards

Armenia faces significant disaster risk levels and is ranked 101 out of 191 countries by the 2019 Inform Risk Index. This ranking is driven strongly by the exposure component of risk. Armenia has high exposure to natural hazards, including, riverine, flash, and coastal, and very high exposure to tropical cyclones and their associated risks. Drought exposure is also significant. Disaster risk in Armenia is elevated due to its moderate levels of social vulnerability and the country's decent coping capacity. The risks of disasters resulting from these drivers are likely to increase as the severity and frequency of extreme climate event increases. In recent decades the annual number of events designated as hazardous hydro-meteorological phenomena (such as hurricanes, snowstorms, heat waves) has increased.

Heatwaves: Armenia regularly experiences high maximum temperatures, with an average monthly maximum of around 13.2°C and an average August maximum of 27.5°C. The current annual probability of a heat wave (defined as a period of 3 or more days where the daily temperature is above the long-term 95th percentile of daily mean temperature) is around 3%. The model ensemble projects that the annual probability of a heatwave could increase from 5% to 18% (depending on emission scenarios) by the end of the century. The country is also projected to experience a significant increase in the number of very hot days (Tmax > 35°C). However, these increases primarily reflect the continual rise in temperatures against the model baseline period of 1986–2005.

Droughts: two primary types of droughts may affect Armenia, meteorological (usually associated with a precipitation deficit) and hydrological (usually associated with a deficit in surface and subsurface water flow, potentially originating in the region's wider river basins). When low hydrological flows also coincide with imperfect crop choices and land

management practices, agricultural drought can also result. At present, Armenia faces a significant annual probability of severe meteorological drought, as defined by a standardized precipitation evaporation index of less than 2.

The 2001 drought highlighted the vulnerability of the rural poor to drought. Agencies working in the region reported more than 25,000 poor households affected, the majority of whom were dependent on local food production which was severely damaged by the drought. The model ensemble projects a dramatic increase in the annual probability of drought increasing from 20% to over 80% (depending on emission scenarios) by the 2090s. Global overview of changes in drought conditions under different warming scenarios supports extreme projections, suggesting that the West Asia region could experience a considerable increase in the frequency of extreme drought. Under 1.5°C of warming what is currently a 1-in-100-year event may return every 20 years, and under 2°C of warming such an event may recur every 10 years or less[11].

Extreme Precipitation, Flood, and Landslide: heavy rainfall events are known to trigger landslides and floods in rural areas of Armenia, often affecting poorer and more isolated rural communities. River levels in Armenia are particularly variable, and high flows often hit communities without forewarning, resulting in flood disasters. Flooding can result in damage to subsistence agriculture and increase the incidence of poverty and health issues. Floods also represent a risk to national economic productivity particularly when affecting the capital city, Yerevan. While most climate models project a small increase in the intensity of extreme precipitation events, uncertainty remains in precipitation projections and model ensemble estimates. The general shift in the seasonality of precipitation away from the summer months, combined with the projected loss of many of Armenia's glaciers will likely intensify extreme events and highlight a need for disaster risk reduction measures. However, research and development in the climate modelling arena is needed to support decision makers and planning efforts, specifically more reliable downscaled modelling and additional work will be needed in order to better understand and map rural exposure and vulnerability.

Climate change impacts

Natural Resources

Water: uncertainty remains around the precise trajectory of future change in the availability of water resources in Armenia and river flows are expected to reduce dramatically. While vulnerability for basin and watersheds vary, under a "worst-case scenario", average decrease in river flow is estimated at 39% by the end of the century[12]. These changes would have a significant impact on the levels of Armenia's lakes and reservoirs, with implication for society potentially coming from the resulting damage to fish stocks and decline in water levels and water quality. However, caution should be applied as these projections are derived from a single climate scenario; other scenarios provide less consistent trends. More recent analysis of runoff from Caucasus Glaciers suggests a significant increase in the short-term (up to 2022) as melting intensifies, but near total loss of glaciers and glacial meltwater towards the end of the 21st century.

[11] Global Changes in Drought Conditions Under Different Levels of Warming, Naumann, G., Alfieri, L., Wyser, K., Mentaschi, L., Betts, R. A., Carrao, H., . . . Feyen, L. (2018).
[12] Republic of Armenia – Fourth National Communication on Climate Change to the UNFCCC

A likely impact of the loss of Armenia's mountain glaciers is an increase in variability of water flows as glaciers typically act to smooth runoff over the year. Water scarcity towards the end of summer (August, September) is likely to increase. Armenia has already experienced declines in annual precipitation and desertification has been documented around the nation, including in the Ararat Valley, an important agricultural production area[13]. More information is needed to understand the potential threat of a broader restructuring of the nation's ecosystems, particularly whether tipping points threaten the viability of current agricultural operations.

Soil and Land Cover: a key route through which climate change may lead to soil and land degradation is its impact on soil moisture. With very large increases in the frequency and intensity of drought projected over Armenia, the potential for declines in soil quality are significant. The Caucasus region is among many regions where an expansion of the arid and semi-arid area is projected, with the affected area growing rapidly over the 21st century under higher emissions pathways. Such changes will reduce ecosystem productivity resulting in species range shifts, and potential loss of biodiversity.

Linked to issues of land degradation and drought are potential changes to Armenia's forest cover, Armenia's NC4 estimates a potential loss of 14,000–17,500 ha (around 3%–4%) by 2030 as a result of changes to ecosystems and growing conditions, as well as increased frequency of forest fire, pest and disease outbreaks, and invasive species. Armenia has already begun to enact adaptation and restoration plans to reduce deforestation through its National Forest Policy and Strategy, improved wildfire management policies and specific area action plans such as the City of Yerevan 5-Year Plan (2019–2023) to restore the city's buffer forest layer by 40 hectares. A general trend of species range shifts towards higher altitudes is expected and conversion of lower altitude land cover to arid forest types, steppe, and semi-desert. Armenia's National Strategy and Action Program to Combat Desertification was ratified in 2015 to increasing the effectiveness of land management, raising public awareness on desertification issues and their solutions, as well as international cooperation[14].

Economic Sectors

Agriculture

Climate change in Armenia is likely to influence food production via direct and indirect effects on crop growth processes. Direct effects include alterations to carbon dioxide availability, precipitation, and temperatures. Indirect effects include through impacts on water resource availability and seasonality, soil organic matter transformation, soil erosion, changes in pest and disease profiles, the arrival of invasive species, and decline in arable areas due to desertification. On an international level, these impacts are expected to damage key staple crop yields, even on lower emissions pathways. Projections estimate 5% and 6% declines in global wheat and maize yields respectively even if the Paris Climate Agreement is met and warming is limited to 1.5°C. Shifts in the optimal and viable spatial ranges of certain crops are also inevitable, though the extent and speed of those shifts remains dependent on the emissions pathway.

[13] Republic of Armenia – Fourth National Communication on Climate Change to the UNFCCC
[14] National Strategy and Action Program to Combat Desertification in the Republic of Armenia

In some cases, changing temperature and rainfall patterns may be favorable for crop production. Under all scenarios of future climate change, the agricultural growing season could extend by 10–40 days in Armenia. However, this may also present challenges due to uncertainty and potential declines in future water resources. Armenia is already struggling with land degradation on most agricultural land; climate change could accelerate this degradation as temperatures rise and extreme weather events increase in frequency and severity. Temperature extremes are likely to result in sub-optimal growing conditions for many of Armenia's highest grossing crops, typically grains and vegetables. The increase in the number of very hot days (>35°C), even in the order of 5 days as projected for the low emissions pathway, is likely to damage yields for almost all crops grown in lowland areas of Armenia as well as for a majority of crops grown in intermediate and upland areas[15]. Studies have suggested pressure will be amplified by a potential doubling of the average water requirement of Armenia's crops as temperatures rise. As the glacier supply depletes, and its regulating effect on flows reduces, effective water storage and management infrastructure will grow in importance.

Armenia implemented sustainable agricultural development strategies to increase the unused arable land in rotation by approximately 10,000 hectares per annum in an effort to combat projected yield reductions[16]. Projections show that by the 2070s, potato crop yields will decrease by 21%, with the highest level of reduction expected in Shirak and Syunik marzes. The largest decline in the grape yields will be recorded in the Ararat Valley – by 20%[17]. At the same time the area of high productivity land is projected to shrink, with a 17% increase in less productive desert and meadow-steppe land. Agriculture, Forestry and Fisheries make up Armenia's lowest paid sector yet continue to employ over 30% of the population. These high levels of vulnerability, and risks in both slow and rapid onset hazards emphasize the serious risks climate change represents in Armenia, particularly under higher emissions pathways.

A further, and perhaps lesser appreciated influence of climate change on agricultural production is through its impact on the health and productivity of the labor force. Labor productivity during peak months has already dropped by 10% as a result of warming, and a decline of up to 20% might be expected by the 2050s under the highest emissions pathway. In combination, it is highly likely that the above processes will have a considerable impact on national food consumption patterns both through direct impacts on internal agricultural operations, and through impacts on the global supply chain. Without adaptation, the economic environment for smallholder agricultural operations is likely to become increasingly hostile[18].

Urban and Energy

Research has established a reasonably well constrained relationship between heat stress and labor productivity, household consumption patterns, and (by proxy) household living standards. In general terms, the impact of an increase in temperature on these indicators depends on whether the temperature rise moves the ambient temperature

[15] Building resilience to climate change in South Caucasus agriculture. World Bank
[16] Strategy of the Main Directions Ensuring Economic Development in Agricultural Sector of the Republic of Armenia for 2020–2030
[17] Republic of Armenia – Fourth National Communication on Climate Change to the UNFCCC
[18] Environmental and socio-economic vulnerability of agricultural sector in Armenia, Melkonyan, A. (2014), Science of The Total Environment

closer to, or further away from, the optimum temperature range. The optimum range can vary depending on local conditions and adaptations. In Armenia, a general decline in productivity is expected due to high temperatures that are offset by a reduction in the frequency of extreme low temperatures. This trend can be measured in the change to the annual heating and cooling degree days. The full model ensemble projects an increase in the annual cooling requirement of around 1,000°C (degree days), versus a decline in the heating requirement of around 2,000°C (degree days). This points towards a potential net energy saving. Armenia's energy policy is focused on ensuring independence and increased security of the energy sector and promotion of the sustainable development of the energy sector based on efficient use of local primary (renewable) energy resources, further development of the nuclear energy sector, diversification of energy supply sources and introduction of energy efficient and advanced technologies. In the medium term, meeting increases in electricity demand, energy system reliability, and affordability of electricity services are important challenge to be addressed[19]. The country has begun to increasingly invest in the development of renewable energy sources and, more specifically, in recent years, electricity generation at photovoltaic (PV) solar plants, with a longer-term interest in further development of wind and nuclear energy.

The effects of temperature rise and heat stress in urban areas are increasingly compounded by the phenomenon of the Urban Heat Island (UHI) effect. Dark surfaces, residential and industrial sources of heat, an absence of vegetation, and air pollution can push temperatures higher than those of the rural surroundings, commonly anywhere in the range of 0.1°C−3°C in global mega-cities. As well as impacting on human health (see Communities) the temperature peaks that will result from combined UHI and climate change, as well as future urban expansion, are likely to damage the productivity of the service sector economy, both through direct impacts on labor productivity, but also through the additional costs of adaptation. The Armenian economy has great dependence on activity in its capital city, Yerevan, where around half of the nation's industrial production takes place. While the economy of the city is strong, and poverty rates comparatively low, the health risks of high temperatures require consideration. The 2018 heatwave, during which a new temperature record was set in Yerevan of 42°C, illustrated the strain that extreme climate events can place on the energy system, with technical faults and high demand putting strain on the energy system. Research suggests that on average, a one degree increase in ambient temperature can result in a 0.5%–8.5% increase in electricity demand.

Heating requirements continue to be an important part of Armenian energy needs. Individual heat boilers are primarily used for heating, of which 50% use natural gas. Natural gas is followed by wood use for heating, with an estimated 35% of Armenian households using wood for heating. This is primarily driven by affordability. As the country's deforestation rates are likely to continue, the use of biomass for heating is likely to continue to the trend, which is expected to adversely affect the poorest households due to a decline in firewood availability and price increase.

Communities

[19] Armenia Power Sector Policy Note, World Bank (2016).

Poverty and Inequality: high poverty rates prevail in Armenia. These are in part linked to high unemployment rates, but also to the poor productivity of the agricultural sector which employs around 35% of the working population. According to the Armenian Statistical Committee wages in the agriculture, fisheries, and forestry sector are the lowest of all the primary sectors. Many households are dependent on remittances received from migrant workers. Disruption of remittance flows is possible as a result of climate change but is an issue which is poorly understood. Due to potential high impacts of climate change on the agricultural sector in Armenia, alongside the increased risk of climate-related disasters, the country faces major challenges from climate change, particularly under higher emissions pathways.

Many of the climatic changes projected are likely to disproportionately affect the poorest groups in society. For instance, heavy manual labor jobs are common among the lowest paid whilst also being most at risk of productivity losses due to heat stress. Poorer businesses are least able to afford air conditioning, an increasing need given the projected increase in cooling days. Poorer farmers and communities are least able to afford local water storage, irrigation infrastructure, and technologies for adaptation. According to the FAO, most agricultural holdings remain small, with an average size of 1.4 ha, many farming households are poor and many already rely on remittances sent from household members who migrate for work during fallow periods on the farm.60 Climate changes, such as changes to growing seasons, extreme weather events and species range shifts (potentially resulting in new invasive species) further threatens to expose a lack of adaptability and resilience in the population dependent on the agricultural sector. The majority of agricultural small-holders are not covered by any insurance system, resulting in reduced resilience to disaster events.

Gender: An increasing body of research has shown that climate-related disasters have impacted human populations in many areas including agricultural production, food security, water management and public health. The level of impacts and coping strategies of populations depends heavily on their socio-economic status, socio-cultural norms, access to resources, poverty as well as gender. Research has also provided more evidence that the effects are not gender neutral, as women and children are among the highest risk groups. Key factors that account for the differences between women's and men's vulnerability to climate change risks include gender-based differences in time use; access to assets and credit, treatment by formal institutions, which can constrain women's opportunities, limited access to policy discussions and decision making, and a lack of sex-disaggregated data for policy change[20].

Human Health: risk to human health from climate-related hazards are expected to increase, particularly under higher emissions pathways. Risks include the increased probabilities of drought, exacerbated by the loss of mountain glaciers, and heat waves. Immediate risks include heat-related sicknesses and the increased vulnerability to malaria outbreaks. These impacts are likely to be followed by the risks to nutrition of associated agricultural losses and water shortages. Experience can be drawn from the 2001 drought, which necessitated emergency food distribution by the World Food Program to around 200,000 citizens in response to high levels of malnutrition. *Nutrition:* The World Food Program estimate that without adaptation the risk of hunger and child

[20] Gender Equality, Poverty Reduction, and Inclusive Growth, World Bank Group (2016)

malnutrition on a global scale could increase by 20% respectively by 2050[21]. Projections suggest there could be approximately 81 climate-related deaths per million population linked to lack of food availability in Armenia by the 2050s. *Heat-Related Mortality*: research has placed a threshold of 35°C (wet bulb ambient air temperature) on the human body's ability to regulate temperature, beyond which even a very short period of exposure can present risk of serious ill-health and death. Temperatures significantly lower than the 35°C threshold of "survivability" can still represent a major threat to human health. Climate change could push global temperatures closer to this temperature "danger zone" both through slow onset warming and intensified heat waves. Armenia has also been identified as a having particularly poor air quality in many of its urban and developed areas and associated issues may be amplified by increased incidence of extreme heat[22]. It is estimated that without adaptation, annual heat-related deaths in the Central Asian region, could increase 139% by 2030 and 301% by 2050.

Priority areas for climate change adaptation

Armenia grapples with the compounding challenges of climate change and land degradation, which pose significant threats to local livelihoods and the regional economy. The project's primary focus revolves around addressing these intertwined issues of climate change adaptation, land degradation, and biodiversity in two crucial hotspots: land and forest degradation. Communities residing near protected areas and forest reserves represent key areas experiencing land degradation, rendering their rural livelihoods and production systems exceptionally susceptible to climate change impacts. This vulnerability stems from resource overexploitation and a dearth of alternative income opportunities.

Consequently, the project's core concentration lies in regions adjacent to the last three remaining protected areas in Armenia: **Khosrov Forest State Reserve**, located in the southwestern region of Ararat Marz, southeast of the capital Yerevan, **Dilijan National Park**, situated in the northeastern Tavush Marz and **Lake Sevan Natural Park** located in Gegharkunik marz. These protected natural ecosystems serve as critical biodiversity sites, while the neighboring communities contend with elevated poverty rates, resource-constrained livelihoods, and limited capacities to tackle land degradation effectively.

- Covering an area of 23,359 hectares, the **"Khosrov Forest" State Reserve** boasts a unique landscape characterized by semidesert, phryganoid, and sparse forest mountain-steppe ecosystems. Intrazonal wetland ecosystems also flourish along the riverbanks and in the vicinity of Mankuq and Gyolaysor settlements. The reserve shelters an impressive array of biodiversity, preserving 1,948 species of vascular plants and 1,783 species of animals, including 1,500 species of invertebrates and 283 species of vertebrates.
- On the other hand, **"Dilijan" National Park** spans 33,765 hectares and is predominantly covered by forests. Renowned for its rich and original biodiversity, the park features mesophile woodlands, distinct ecosystems of scientific, educational, and economic significance, and a host of environmental, cognitive, therapeutic, and recreational attributes. The park serves as a haven for biodiversity, housing 1,200

[21] Two minutes on climate change and hunger: A zero hunger world needs climate resilience, WFP (2015)
[22] Armenia Environmental Performance Index (2019).

species of vascular plants and 1,660 species of animals, encompassing 1,431 invertebrates and 229 species of vertebrates.

- **"Sevan" National Park**, safeguards Lake Sevan and its surrounding ecosystems. The park oversees a research center that monitors and conserves these diverse environments. Additionally, the park regulates licensed fishing activities on Lake Sevan. The park's biodiversity is notable, hosting 267 bird species, including 56 from Armenia's Red Book of Animals, such as the Armenian gull and Mountain Chiffchaff. Reptiles and amphibians, including various lizard and snake species, inhabit the Masrik River valley. This region is essential for the reproduction of endemic fish species like Sevan trout and Gokcha barbel. The park boasts diverse invertebrates, some endemic, and is rich in plant life, with several endemic species and numerous medicinal and edible herbs. Sevan National Park plays a critical role in preserving Armenia's natural heritage and fostering biodiversity conservation.

The project will specifically target the following communities adjacent to these three protected areas:

1. **Ararat marz:**
   - **Urtsadzor** municipality *(beneficiary of pilot project)*;
   - Vedi municipality:
     - ✓ Goravan settlement;
     - ✓ Vanashen settlement;
     - ✓ Sisavan settlement;
   - Ararat municipality:
     - ✓ Zangakatun settlement;
     - ✓ Urtsalanj settlement;
     - ✓ Lanjar settlement;
     - ✓ Paruyr Sevak settlement;
     - ✓ Armash settlement;
2. **Tavush marz:**
   - Dilijan municipality *(beneficiary of pilot project)*;
   - Ijevan municipality:
     - ✓ Sevkar settlement;
     - ✓ Achajur settlement;
     - ✓ Khashtarak settlement;
3. **Gegharkunik marz:**
   - Sevan municipality:
     - ✓ Semyonovka settlement;
     - ✓ Tsovagyukh settlement;

4. **Armavir marz:**
   - Khoy municipality;

Excerpts from consultations with stakeholders (beneficiary municipalities) in determination of the Project's intervention framework are presented in the Annex I.

The vulnerability of the target communities to climate change is multifaceted. Firstly, it stems from land and biodiversity degradation along with marginal production systems. Second, the presence of weak infrastructure, inefficient irrigation systems, and limited adoption of climate-friendly technologies compounds this vulnerability. Third, poverty and the absence of alternative income opportunities exert additional pressure on natural resources. In particular, community pastures, situated 3-9 kilometers from residential areas, are intensively used by cattle breeders from March to late November. Regrettably, these pastures suffer from continuous grazing, lack watering points, and are underutilized due to poor road conditions and social constraints among residents. Consequently, pastures near communities have significantly degraded, leading to diminished soil quality, increased prevalence of non-grazed plant species, and prolonged degradation, exacerbated by animals crossing vast distances for water. The pastures' adaptive capacity has been severely compromised and is expected to further decline with ongoing climate change, potentially resulting in a 5% degradation of community pastures and the transformation of up to 30% into semi-desert ecosystems within the next decade, unless surface improvement measures are undertaken.

These challenges profoundly affect the communities' living standards. Reduced agricultural and livestock incomes restrict access to essential resources like gas and electricity for many residents, prompting the use of wood and dried manure as fuel. This intensifies pressure on forest ecosystems, diminishing their climate and water-absorbing properties. Additionally, illegal activities such as logging, grazing, and plant harvesting are prevalent in the region due to high levels of poverty and limited awareness regarding the value of protected areas. These illicit practices degrade vegetation cover, further eroding ecosystem resilience to climate change. Given the significance of specially protected natural areas for enhancing ecosystem resilience to climate change and their broader environmental, social, health, and scientific importance, fostering cooperation between communities and organizations managing these protected areas is essential. Nonetheless, this endeavor should be accompanied by efforts to improve social conditions among the population, with particular attention to women living in poverty who may lack access to alternative income opportunities and may engage in illegal activities for household subsistence. Communities should be regarded as contributing rather than impeding factors in the conservation of protected areas. However, community self-governing bodies face limitations in providing the necessary financial resources for implementing climate adaptation measures, adopting energy-efficient technologies, and diversifying value chains. This includes initiatives such as installing solar water heaters, constructing modern greenhouses, repairing irrigation systems, diversifying agriculture, reconstructing roads for waterways, and establishing watering points in pastures. The analysis of community budgets in 2021 and 2022 reveals that these budgets primarily rely on communities' own revenues and government subsidies.

Project/Programme Objectives:

Main objectives of the project/programme.

The **overall objective** of the project is reducing the climate risk vulnerability of local communities living adjacent to the “Khosrov Forest”, “Dilijan” and “Lake Sevan” National Parks through promoting sustainable and climate-resilient agricultural practices in degraded areas and buffer zones, thereby reducing climate-related risks and vulnerabilities in production systems while sustaining protected areas. Through the implementation of community-based, climate-smart agricultural practices, strengthening of value chains and technology transfer, and raising awareness and capacity building, the **Project aims** to enhance the adaptive capacity of vulnerable rural communities, improve land degradation neutrality, and contribute to the long-term sustainability of agricultural ecosystems.

The **specific objectives** of proposed Project are:

- To implement climate-smart agricultural practices in degraded areas to enhance water use efficiency, rehabilitate pastures, establish perennial sowing areas, and improve adaptive capacity of community pastures and hay meadows;
- To strengthen value chains for climate-smart agriculture, enhance accessibility to climate-smart technologies, and promote sustainable land management practices for vulnerable rural communities;
- To raise awareness, build capacity, facilitate monitoring, and enhance decision-making regarding climate-smart agricultural practices and Land Degradation Neutrality (LDN) in targeted communities;
- To scale up successfully tested during pilot project practices and replicate in new communities;

The envisioned project will create adaptive strategies in response to the impacts of climate change on agricultural and natural landscapes. Its primary focus is to bolster the livelihoods of affected communities in a sustainable manner. This involves introducing climate-smart agricultural technologies, enhancing the value chain of selected products (like dried fruits, vegetables, and herbs), and fortifying the planning capacity of these communities to enhance their resilience. The project aims to prioritize and engage vulnerable groups such as women and impoverished households to ensure that it empowers rather than exacerbates existing inequalities. It aligns with the concepts of both land degradation neutrality and climate change adaptation.

The project will be centered around three core adaptive strategies: (i) adapting agro-ecological landscapes to maintain agricultural productivity in the face of escalating climate change, (ii) upholding climate-smart agricultural value chains through the promotion of cost-effective, energy-efficient technologies, and (iii) enhancing local communities' planning capabilities to reinforce their adaptive capacities. By harmonizing the principles of land degradation neutrality and climate-smart agriculture, the project becomes a pivotal steppingstone towards achieving land degradation neutrality.

Implementing "Climate Smart Farming" practices and techniques holds immense

significance as they mitigate greenhouse gas emissions and enhance adaptability within natural and agricultural ecosystems. In light of rising temperatures and changing precipitation patterns, agriculture must proactively adapt. This entails focusing on various pivotal aspects to boost adaptability.

The project is structured into three main components, each yielding specific outcomes. Component 1 prioritizes community-based, gender-inclusive interventions to bolster the adaptive capacity of the agricultural sector. Component 2 supports climate-smart agricultural value chains, thereby establishing and sustaining income-generating initiatives for the involved communities. Component 3 encompasses capacity building, awareness raising, local training, knowledge management, and information dissemination to fortify national strategies and policies concerning climate change adaptation. The primary interventions will be executed in the adjacent communities neighboring the "Khosrov Forest" State Reserve and "Dilijan" National Park.

This project's concept aligns with the policies of the Adaptation Fund and incorporates global best practices. The formulation of the Concept Note involved community consultations across all target areas, enabling participatory planning and the identification of priority climate change adaptation measures. Data collection through questionnaires and community meetings was conducted to pinpoint factors that could disrupt the adaptation of natural ecosystems and agricultural landscapes, resulting in the formulation of key intervention priorities for each community. These interventions primarily aim to enhance ecosystems' and communities' adaptability to climatic anomalies such as extreme temperatures, dry and hot winds, frosts, hails, rains, and increased air temperatures.

The Project operates as a pilot or incubator initiative, with the intention to be scaled up across vulnerable regions and buffer zones adjoining protected areas and forests in Armenia. It employs a bottom-up, community-focused approach where local actions are defined, prioritized, and executed by vulnerable communities, ensuring equal participation from both women and men.

Project/Programme Components and Financing:

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

For the case of a programme, individual components are likely to refer to specific sub-sets of stakeholders, regions and/or sectors that can be addressed through a set of well-defined interventions / projects.

Component 1: Community-based, Equitable, and Gender-Responsive Adaptive Capacity Strengthening

This component aims to enhance the adaptive capacity of local communities in the face of changing climate conditions. By adopting community-based, gender-responsive approaches, the component will empower vulnerable communities to effectively

manage climate-related risks. Through a combination of infrastructure rehabilitation, sustainable land management, and pasture enhancement, the component seeks to improve water use efficiency, rehabilitate degraded lands, and promote sustainable livestock management practices.

Proposed activities under the Component 1:

- **Rehabilitation of Irrigation Water Supply Systems:** This activity involves rehabilitating irrigation water supply systems in six municipalities. Solar-powered pumps will be installed, increasing water use efficiency. This will ensure reliable water supply for agricultural activities and mitigate the impacts of water scarcity.
- **Installation of Water Efficient Drip Irrigation Systems:** Drip irrigation systems will be introduced in orchards across six municipalities. This activity will conserve water resources and improve the efficiency of water distribution, leading to healthier orchards and increased agricultural productivity.
- **Rehabilitation of Field Tracks to Remote Pastures:** This activity focuses on rehabilitating degraded field tracks to remote pastures. By restoring access routes, this activity will facilitate the sustainable movement of livestock and reduce land degradation caused by overgrazing in sensitive areas.
- **Creation of Perennial Plant Sowing Areas:** Establishing perennial plant sowing areas across 30 hectares will combat rangeland degradation. Perennial plants play a vital role in stabilizing soil, preventing erosion, and enhancing biodiversity.
- **Rehabilitation of Community Pastures and Hay Meadows:** Through the rehabilitation of 500 hectares of community pastures and hay meadows, this activity will improve adaptive capacity, strengthen grazing management, and enhance the overall resilience of these vital ecosystems.
- **Construction of Livestock Watering Points:** The establishment of five livestock watering points will provide a reliable water source for livestock, reducing the pressure on natural water sources and promoting sustainable grazing practices.
- **Capacity building for improved grazing management in targeted municipalities:** Conducting targeted training and capacity-building initiatives for the local communities to enhance their skills and knowledge in sustainable grazing management practices and developing incentive mechanisms to encourage and reward the adoption of sustainable grazing management practices by the local communities.

Component 1 focuses on enhancing adaptive capacity in agriculture through community-based and gender-responsive interventions. By improving water management, sustainable land use, and pasture conditions, the component aims to strengthen the resilience of vulnerable communities to climate-related challenges.

Component 2: Climate-Smart Agricultural Value Chain Strengthening

This component aims to strengthen the value chains of climate-smart agriculture, ensuring the accessibility of innovative technologies for vulnerable communities. By introducing energy-efficient agricultural practices and creating demonstration sites for sustainable land management, the component seeks to increase the adaptive capacity

of local communities. Additionally, the promotion of agro-acceleration hubs and model agrotourism facilities aims to foster integration within existing supply chains and diversify income sources.

Proposed activities under the Component 2:

- **Introduction of Smart Agricultural Practices:** Implementing climate-smart practices, such as constructing anti-hail nets and planting shrubs, will mitigate climate risks and enhance agricultural productivity across six municipalities.
- **Establishment of Non-Heated Greenhouses:** The construction of lightweight, energy-efficient greenhouses will extend growing seasons, enabling year-round cultivation and improving the economic viability of agriculture.
- **Installation of Solar Dryers:** By introducing solar dryers, communities will have the means to process and preserve produce effectively, leading to reduced post-harvest losses and increased income.
- **Formulation of Business Plans for Climate-Smart Value Chains:** This activity will assist communities in formulating business plans that integrate climate-smart practices, fostering sustainable and profitable agricultural enterprises.
- **Piloting of Agrivoltaic Systems:** By testing agrivoltaic systems that combine agriculture with solar energy production, the component aims to enhance resource efficiency and create innovative income streams.
- **Construction of Demonstration Sites for Sustainable Land Management:** These sites will showcase best practices for land management, helping communities adopt sustainable agricultural techniques to mitigate land degradation.
- **Establishment of Agro-Acceleration Hubs:** This activity aims to establish two agro-acceleration hubs that connect local farmers with supply chains, enabling efficient market access and strengthening rural economies.
- **Piloting of Model Agrotourism Facilities:** The creation of two agrotourism facilities in each community will diversify income sources, promote rural tourism, and raise awareness about sustainable agricultural practices.
- **Testing New Varieties of Crops:** By piloting heat and drought-resistant crop varieties, this activity aims to enhance agricultural productivity under changing climate conditions.

Component 2 focuses on enhancing climate-smart agricultural value chains through the introduction of innovative technologies and practices. By creating demonstration sites, establishing agro-acceleration hubs, and diversifying income through agrotourism, the component seeks to strengthen rural livelihoods and increase the adaptive capacity of vulnerable communities.

Adaptation rationale for component 2 activities:

While some activities within Component 2 may appear to resemble traditional agricultural development practices, it is imperative to underscore their significance in enhancing climate resilience within vulnerable communities. These activities are meticulously designed to not only boost agricultural productivity but also to fortify local communities against the evolving challenges posed by climate change. Below, we

provide a detailed explanation of the climate change adaptation rationale for the activities in Component 2:

- **Introduction of smart agricultural practices**: activities such as constructing anti-hail nets and planting shrubs are strategic responses to climate risks. The increased frequency and intensity of extreme weather events, such as hailstorms, necessitate innovative approaches to protect crops and reduce losses. By adopting these practices, we aim to enhance the resilience of local agriculture to climate-induced risks.
- **Establishment of non-heated greenhouses**: energy-efficient greenhouses are introduced not only to extend growing seasons but also to mitigate the impacts of unpredictable climate conditions. Rising temperatures and changing weather patterns can disrupt traditional planting and harvesting schedules. Non-heated greenhouses offer a means to adapt to these challenges and ensure year-round cultivation.
- **Installation of solar dryers**: the introduction of solar dryers addresses a critical aspect of climate adaptation – efficient post-harvest management. Climate variability affects the timing and quality of harvests. Solar dryers empower communities to process and preserve produce effectively, reducing post-harvest losses and bolstering income, especially during periods of climate-related disruptions.
- **Formulation of business plans for climate-smart value chains**: business plans incorporating climate-smart practices are essential for long-term climate adaptation. These plans help communities navigate climate risks while fostering sustainable and profitable agricultural enterprises. They are not business-as-usual but represent a proactive response to climate challenges.
- **Piloting of agrivoltaic systems**: testing Agrivoltaic systems, which combine agriculture with solar energy production, is a forward-looking initiative. Beyond renewable energy generation, these systems enhance resource efficiency and create innovative income streams. They contribute to both climate adaptation and sustainable energy practices.
- **Construction of demonstration sites for sustainable land management**: these sites serve as models for sustainable land management practices. In a changing climate, adopting techniques to mitigate land degradation and improve soil health is paramount. These demonstration sites promote the adoption of climate-resilient agricultural techniques.
- **Establishment of agro-acceleration hubs**: establish and support agro-acceleration hubs dedicated to identifying, incubating, and accelerating promising agricultural startups. These hubs will play a crucial role in fostering innovation and entrepreneurship within the agriculture sector.
- **Piloting of model agrotourism facilities**: diversifying income sources through agrotourism aligns with climate adaptation goals. In the face of climate uncertainties, diversification offers a buffer against income fluctuations. Additionally, raising awareness about sustainable agricultural practices contributes to climate resilience.
- **Testing new varieties of crops**: piloting heat and drought-resistant crop varieties is a proactive measure to ensure agricultural productivity in changing climate conditions. These new crop varieties are specifically selected to adapt to evolving climate patterns.

In summary, the activities proposed under Component 2 may resemble conventional

agricultural development, but they are driven by a robust climate change adaptation rationale. These initiatives are not business-as-usual; they are forward-looking, proactive responses to the challenges posed by climate change. By enhancing the adaptive capacity of local communities and fortifying agriculture against climate-related risks, Component 2 plays a pivotal role in building climate resilience for a sustainable future.

The following considerations provides with the additional strong adaptation rationale for the activities crafted under the Component 2:

Pilot initiatives for learning and demonstration: Component 2's activities serve as pioneering examples, demonstrating the integration of climate-resilient practices into agriculture. These pilots are crucial learning platforms, providing tangible evidence of the effectiveness and feasibility of adaptive strategies, thereby inspiring broader adoption and replication in various agricultural contexts.

Infrastructure for climate resilience: The activities under Component 2 also involve strategic investments in resilient infrastructure, essential for supporting and sustaining adaptive agricultural practices. This infrastructure is not only pivotal for the success of the pilot initiatives but also lays a foundational framework for future climate-resilient agricultural endeavors, facilitating seamless replication and scaling-up.

Knowledge sharing for capacity building: A cornerstone of Component 2 is the emphasis on knowledge dissemination and capacity enhancement. Through structured training and awareness programs, the activities aim to cultivate a cadre of informed and skilled agricultural practitioners. This knowledgeable community will be instrumental in championing and proliferating climate-resilient practices, acting as catalysts for change within and beyond their communities.

Diversification for risk mitigation: The pilot initiatives incorporate innovative diversification strategies, providing a buffer against climate-induced uncertainties and risks. These strategies not only enhance productivity but also fortify agricultural systems against climate variability, safeguarding livelihoods and ensuring food security in the face of changing climate patterns.

Through the combination of these elements, Component 2's activities offer a compelling adaptation rationale, providing a blueprint for resilient, sustainable, and adaptive agricultural practices that are primed for future replication and scaling-up. These activities are not business-as-usual but are forward-looking initiatives, anticipating and responding to the challenges posed by climate change while paving the way for resilient agricultural futures.

Component 3: Awareness Raising, Capacity Building, Monitoring, and Decision Making

This component aims to enhance awareness, build capacity, and facilitate effective decision-making in climate-smart agricultural practices. Through farmer field schools, extension services, and community-based adaptation planning, the component seeks to empower local stakeholders to make informed choices for sustainable land management. Additionally, strengthening the capacities of municipalities and civil society organizations will support the integration of climate-smart practices into local

policies.

Proposed activities under the Component 3:

- **Provision of Farmer Field Schools and Extension Services:** Farmer field schools and extension services will share best practices of climate-smart agriculture and promote the adoption of sustainable techniques among 200 beneficiaries.
- **Formulation and Dissemination of Training Material:** This activity will involve the creation and dissemination of training materials on adapting to climate change, promoting best practices, and sharing examples of successful agricultural ecosystem adaptations.
- **Community-Based Adaptation Planning:** Formulating community-based adaptation plans will enable targeted communities to plan and implement climate-smart strategies that align with their specific needs and conditions.
- **Formulation of Strategies for Sustainable Agriculture and Land Degradation Neutrality:** Communities will formulate strategies to sustain climate-smart agriculture and promote land degradation neutrality, ensuring long-term environmental and economic viability.
- **Capacity Advancement of Local Stakeholders:** Enhancing the capacities of local stakeholders, including municipalities, local civil society organizations and managers of protected areas will foster effective implementation and integration of climate-smart agricultural practices.

Component 3 focuses on building awareness, capacity, and decision-making abilities among local stakeholders regarding climate-smart agricultural practices. By providing training, facilitating community-based planning, and strengthening organizational capacities, the component aims to ensure that climate adaptation and land degradation neutrality principles are effectively integrated into local strategies and actions.

The proposed project aims to address the challenges posed by climate change on agricultural and natural landscapes. Through three distinct components, the project seeks to enhance adaptive capacity, strengthen agricultural value chains, and improve awareness and decision-making capabilities. By fostering community engagement, introducing innovative technologies, and promoting sustainable practices, the project aims to empower vulnerable communities and contribute to a sustainable and climate-resilient future for both people and ecosystems. Through a combination of comprehensive activities, the project strives to achieve its overarching goal of reducing climate-related vulnerabilities, enhancing agricultural sustainability, and promoting land degradation neutrality.

N	Project/Program Components	Expected Concrete Outputs	Expected Outcomes	Amount (US$)
1.	**Component 1:** Community based,	Output 1.1 Irrigation water supply	**Outcome 1:** Community based,	

	climate smart agricultural practices in degraded areas and buffer zone	systems in 6 new municipalities are rehabilitated increasing water use efficiency *(12,000 m and 6 solar-powered pumps)*; <u>Output 1.2</u> Orchards with drip irrigation system and anti-hail nets will be established in 6 communities (12 ha); <u>Output 1.3</u> Existing field tracks to remote pastures degraded lands are rehabilitated (15% of field tracks rehabilitated 20 km rehabilitated 25 culverts installed); <u>Output 1.4</u> Sowing areas of perennial plants are created reducing rangeland degradation *(30 ha of perennial sowing area established)*; <u>Output 1.5</u> Community pastures and hay meadows are rehabilitated and improved their adaptive capacity *(500 ha hay meadows, pastures and arable lands rehabilitated)*; <u>Output 1.6</u> Livestock watering points are constructed *(5 watering points constructed)*; <u>Output 1.7</u> Architectural and design drawings and estimates;	climate smart agricultural practices are implemented in degraded areas to reduce climate risks vulnerability of production systems and sustain protected areas	**748.000** **485.000** **165.000** **78.000** **268.000** **69.500** **95.000**

		Output 1.8 Capacity building for improved grazing management in targeted municipalities		**40,000**
Subtotal for Component 1.				**1.948.500**
2.	**<u>Component 2:</u>** Strengthening value chains and climate smart technology transfer for vulnerable communities	<u>Output 2.1</u> Smart agricultural practices in 6 municipalities are introduced*, establishing 3 ha berry orchards with drip irrigation system* <u>Output 2.2</u> Non-heated, lightweight greenhouses are constructed in priority community areas *(3000m^2 of greenhouses constructed 40 beneficiaries)* <u>Output 2.3</u> Solar dryers are installed in priority community areas *(40 solar dryers constructed 40 beneficiaries)* <u>Output 2.4</u> Community management and business plans are formulated for climate smart agricultural value chains *(5 business plans formulated)* <u>Output 2.5</u> Agrivoltaic systems are piloted *(10 installations with 30 KW of installed capacity each)* <u>Output 2.6</u> Demonstration sites for sustainable land	**<u>Outcome 2:</u>** Value chains for climate smart agriculture are strengthened and climate smart technologies are accessible for vulnerable rural communities	**75.000** **175.000** **124.352** **65.000** **405.000**

		management practices are constructed in each municipality; Output 2.7 2 agro-acceleration hubs are piloted to enhance integration with existing supply chains; Output 2.8 2 model agrotourism facilities are piloted in every community Output 2.9 New varieties of dry and heat resistant crops are piloted		**35.000** **250.000** **150.000** **45.000**
Subtotal for Component 2.				**1.324.352**
3.	**Component 3:** Awareness raising, capacity building, monitoring and decision making for climate smart agricultural practices	Output 3.1 Farmer field schools and extension services have been provided to share best practices of climate smart agriculture and LDN for the targeted communities (200 beneficiaries) Output 3.2 Best practices examples and training material on natural and agricultural ecosystems' adaptation under the conditions of climate change are formulated, disseminated and made accessible *(4 training programs and thematic topics)*; Output 3.3 Community based adaptation planning is	**Outcome 3:** Awareness, planning, monitoring and decision-making capacity on climate smart agriculture production methods and LDN has increased in target communities	**40.000** **40.000**

		conducted for target communities *(4 community-based adaptation plans formulated)* <u>Output 3.4</u> Strategies for sustaining climate smart agriculture and LDN in target areas have been formulated *(4 community-based* strategies *adaptation plans formulated)* <u>Output 3.5</u> Capacities of local stakeholders, including municipalities, CSOs and managers of protected areas (women, youth, environmental) are advanced;		**15.000** **15.000** **50,000**
Subtotal for Component 3.				**160.000**
	<u>Total: Project Components</u>			**3.432.852**
4.	Project/Programme Execution cost			**51.492**
5.	Total Project/Programme Cost			**3.484.344**
6.	Project/Programme Cycle Management Fee charged by the Implementing Entity (if applicable)			**296.169**
	Amount of Financing Requested			**3.780.513**

Projected Calendar:

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

Milestones	Expected Dates
Start of Project/Programme Implementation	10 January 2024

Mid-term Review (if planned)	10 January 2026
Project/Programme Closing	10 January 2028
Terminal Evaluation	10 March 2028

PART II: PROJECT/PROGRAMME JUSTIFICATION

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

Component 1: Community-based, Equitable, and Gender-Responsive Adaptive Capacity Strengthening

Adaptation Activities:

- **Rehabilitation of Irrigation Water Supply Systems:** By rehabilitating irrigation systems and introducing solar-powered pumps, this activity enhances water use efficiency. Communities can better manage water resources, ensuring reliable irrigation for crops even during water-scarce periods. This builds resilience against changing precipitation patterns.
- **Installation of Water Efficient Drip Irrigation Systems:** Drip irrigation conserves water by delivering it directly to plant roots. This minimizes water wastage and enhances plant growth. The activity contributes to water scarcity resilience while maintaining agricultural productivity.
- **Rehabilitation of Field Tracks to Remote Pastures:** Rehabilitating field tracks prevents soil erosion and land degradation caused by uncontrolled livestock grazing. Communities can control grazing patterns, mitigating overgrazing impacts and building the resilience of pasture lands.
- **Creation of Perennial Plant Sowing Areas:** Establishing perennial plants reduces soil erosion, improves soil fertility, and enhances biodiversity. This activity boosts ecosystem resilience by stabilizing landscapes and promoting sustainable land use.
- **Rehabilitation of Community Pastures and Hay Meadows:** By rehabilitating these ecosystems, communities enhance their capacity to withstand extreme weather events. Restored pastures and meadows are better equipped to recover from disturbances, contributing to overall landscape resilience.
- **Construction of Livestock Watering Points:** Constructing watering points ensures reliable water access for livestock, even during droughts. This minimizes stress on natural water sources, maintains livestock health, and supports climate-resilient livestock management.

- **Conducting targeted training and capacity-building initiatives** for the local communities to enhance their skills and knowledge in sustainable grazing management practices and developing incentive mechanisms to encourage and reward the adoption of sustainable grazing management practices by the local communities.

Climate Resilience Contribution: These activities collectively enhance local communities' ability to manage water resources efficiently, mitigate land degradation, and sustainably manage pastures. By implementing climate-smart agricultural practices, communities can better withstand erratic weather patterns, prolonged droughts, and other climate-related stressors.

Component 2: Climate-Smart Agricultural Value Chain Strengthening

Adaptation Activities:

- **Introduction of Smart Agricultural Practices:** Anti-hail nets and shrub planting protect crops from extreme weather events, thus enhancing crop resilience against hailstorms and other adverse conditions.
- **Establishment of Non-Heated Greenhouses:** Greenhouses provide controlled environments, shielding crops from extreme temperatures and weather fluctuations. This enhances crop production stability and resilience in the face of climate variability.
- **Installation of Solar Dryers:** Solar dryers help communities preserve excess harvests, reducing food loss during unpredictable weather events. This activity supports food security and resilience against changing conditions.
- **Piloting of Agrivoltaic Systems:** Integrating solar energy with agriculture diversifies income sources and reduces dependency on traditional energy. This resilience-building activity ensures continued productivity in energy and agriculture sectors.
- **Construction of Demonstration Sites for Sustainable Land Management:** Demonstrating sustainable land management techniques encourages widespread adoption. Communities can build resilience against land degradation and promote long-term ecosystem health.
- **Establishment of Agro-Acceleration Hubs:** These hubs link farmers with markets, enabling swift response to market fluctuations and economic shocks. Diversified income sources enhance community resilience in changing economic environments.
- **Piloting of Model Agrotourism Facilities:** Agrotourism diversifies income and raises awareness about sustainable practices. This supports communities by creating alternative income streams that are less dependent on climate-sensitive activities.
- **Testing New Varieties of Crops:** Piloting heat and drought-resistant crop varieties ensures continued agricultural productivity under changing climate conditions.

Climate Resilience Contribution: These activities contribute to economic diversification, increased energy efficiency, and improved agricultural practices. By integrating renewable energy, enhancing food preservation, and diversifying income, communities build resilience against climate-induced disruptions in both energy and agriculture sectors.

These components and their adaptation activities collectively empower communities to adapt to climate change by adopting sustainable practices, enhancing resource efficiency, and creating alternative income streams. By strengthening local adaptive capacity and promoting resilient agricultural practices, the project contributes to climate resilience and lays the groundwork for a sustainable and climate-smart future.

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

The Project is meticulously designed to yield substantial economic, social, and environmental benefits, with a pronounced emphasis on supporting the most vulnerable communities and specific vulnerable groups within these communities, including smallholder farmers, women (including women-led households which represents one third of the households in the beneficiary municipalities), youth, elderly, people with disabilities and national/cultural/religious minorities. It conscientiously integrates gender considerations throughout its framework to ensure inclusivity and strict adherence to the Environmental and Social Policy and Gender Policy of the Adaptation Fund.

Economic Benefits:

Income diversification: By establishing agro-acceleration hubs and model agrotourism facilities, the Project introduces novel income streams for vulnerable communities, particularly benefiting vulnerable groups by providing them with accessible economic opportunities and financial independence. More specifically: 1) Creation of hubs that serve as centers for innovation, training, and support for agricultural entrepreneurs will support incubators for new agricultural businesses, providing resources, mentorship, and access to finance, thereby fostering entrepreneurship and creating diverse income opportunities for community members; 2) Development of model agro-tourism facilities will generate income through services like guided tours, lodging, and selling local produce. This not only provides direct employment but also creates a market for local goods, promoting diverse revenue streams for the community.

Enhanced agricultural productivity: Through the introduction of climate-smart agricultural practices, technologies, and diversified crops, the Project promotes increased yields and improved produce quality, fortifying local economies and food security, especially for vulnerable groups in the following manner: 1) Introduction of climate-smart agricultural practices: Implementing practices resilient to climate variations, such as conservation tillage, crop rotation, will improve soil health, water-use efficiency, and overall crop yield. This enables farmers to produce more and better-quality crops under adverse climate conditions, enhancing productivity and food security for the community; 2) Provision of training and capacity building: Conducting training sessions and workshops for farmers on modern agricultural techniques, pest management, and technology use in farming will equip them with the necessary knowledge and skills. This enhances their ability to increase productivity, manage crops efficiently, and make informed decisions, leading to improved yields and food security; 3) Support for diversified

crop cultivation: Assisting farmers in diversifying their crop portfolios to include resilient crops with high market demand will reduce dependency on a single crop, mitigate risks associated with crop failure, and provide multiple sources of income. This approach ensures stable and increased productivity, benefiting the entire community; 4) Distribution of improved seed varieties: Providing farmers with drought-resistant, disease-resistant, and high-yielding seeds is crucial for enhancing productivity. These improved seed varieties thrive in challenging environmental conditions, resulting in higher and more reliable yields, which are vital for the economic stability of farming households; 5) Implementation of efficient irrigation systems: Introducing efficient irrigation systems, like drip or sprinkler irrigation, will optimize water use. This is vital for maintaining crop productivity in areas facing water scarcity, ensuring consistent and enhanced agricultural output for the community.

Value chain strengthening: The Project focuses on improving value chains to enhance the marketability of agricultural products, leading to increased income for farmers and community members, particularly benefiting vulnerable groups. More specifically, the Project will support: 1) Development of market linkages: Establishing connections between smallholder farmers and larger markets, including retailers and exporters, will facilitate access to broader and more lucrative markets. This initiative will allow farmers to sell their products at competitive prices, enhancing their income and economic stability; 2) Capacity building for quality improvement: Conducting training and workshops on quality standards, certification processes, and post-harvest handling techniques will empower farmers to produce goods that meet market demands and quality criteria. This enhancement in product quality will attract premium prices, further increasing farmers' income; 3) Support for value-added processing: Promoting and providing support for the development of small-scale processing units within the community will enable farmers to convert their produce into value-added products, such as jams, juices, and preserved foods. These value-added products have higher market demand and value, providing an additional source of income for the community; 4) Facilitation of cooperative structures: Encouraging and supporting the formation of farmer cooperatives and associations will allow smallholder farmers to pool resources, share risks, and collectively negotiate better prices for their products. These cooperative structures strengthen the bargaining power of farmers in the market, ensuring fair compensation for their produce; 5) Provision of market information systems: Implementing systems that provide real-time market information and price trends to farmers will assist them in making informed decisions regarding when and where to sell their products. Access to accurate market information enables farmers to strategically plan their sales to maximize profits.

Social Benefits:

Capacity building: The Project's capacity-building initiatives are designed to empower vulnerable communities, providing them with essential skills and knowledge to navigate climate change challenges effectively. Through workshops and training sessions, community members learn about climate-smart agricultural practices and technologies, enhancing their ability to implement resilient and productive farming methods. Farmer Field Schools offer hands-on learning experiences, fostering a culture of continuous improvement and innovation in sustainable farming practices within the community. Financial literacy and management training courses equip individuals with the understanding of finance basics, enabling informed financial decisions and effective income management. Leadership workshops aim to cultivate community leaders, especially among women and youth, promoting active participation in community

decision-making processes. Additionally, technology and digital literacy training introduce community members to tools and technologies that not only improve their agricultural practices but also broaden their access to vital information, resources, and markets, strengthening their adaptive capacity to environmental and economic changes. Each capacity-building activity is meticulously crafted to provide immediate and long-term benefits, contributing to the community's resilience and sustainability.

Inclusive participation: The Project champions inclusive participation, ensuring that vulnerable groups, including women, youth, and marginalized households, are actively involved in all initiatives. This approach guarantees that the activities are not only tailored to address the unique needs and challenges of these groups but also empower them to contribute to and benefit from the Project's outcomes. Through community engagement sessions and participatory decision-making processes, all community members have a voice in shaping the Project's direction and implementation. Special efforts are made to engage women and youth in these processes, providing them with platforms to express their views and concerns. Furthermore, the Project implements awareness campaigns to promote the importance of inclusivity and diversity in community participation, fostering an environment where everyone's contribution is valued and considered. This inclusive approach not only ensures equitable access to the Project's benefits but also harnesses the diverse skills and perspectives of the entire community, enhancing the effectiveness and sustainability of the Project's interventions.

Awareness and education: The Project places a significant emphasis on awareness and education, aiming to instill a deep understanding of climate-smart practices, sustainable land management, and adaptation strategies among the community members. This educational initiative is crucial for fostering a culture of environmental stewardship and resilience within the community. Through targeted awareness campaigns, community workshops, and the distribution of educational materials, members are informed and educated about the importance and benefits of adopting sustainable and climate-resilient practices in their daily lives and occupations. Special educational programs are designed for different community groups, including farmers, women, youth, and the elderly, ensuring that the information is accessible and understandable for all. These programs not only provide theoretical knowledge but also offer practical skills and tips that community members can immediately apply to enhance their adaptive capacity to climate change. Furthermore, the Project collaborates with local schools and educational institutions to incorporate climate change and environmental education into their curriculums, reaching younger generations and instilling a sense of responsibility and awareness from an early age. This comprehensive approach to awareness and education empowers the community with the knowledge and skills necessary to actively participate in and contribute to the Project's sustainability and success.

Environmental Benefits:

Sustainable land management: The Project is deeply committed to promoting Sustainable Land Management practices, crucial for maintaining healthy ecosystems while meeting the increasing demands for food and livelihoods of the growing population. Practices introduced by the Project include rehabilitating degraded pastures, and implementing conservation tillage. These practices are designed to prevent soil erosion, improve soil fertility, and enhance biodiversity, creating a resilient and productive agricultural landscape. For instance, degraded pastures are restored through reseeding,

controlled grazing, and the introduction of perennial grasses, which not only improve the quality of the land but also increase its productivity. Conservation tillage practices reduce soil disturbance, preserving soil structure and moisture, and decreasing erosion. Through workshops and training sessions, farmers and landowners are educated and encouraged to adopt these practices, providing them with the knowledge and tools necessary to manage their land sustainably. This approach ensures that the land can continue to support agricultural activities, provide ecosystem services, and sustain livelihoods for the present and future generations. The Project's commitment to sustainable land management not only contributes to environmental conservation but also supports the economic and social well-being of the community.

Energy efficiency: The Project actively promotes energy efficiency as a cornerstone for environmental conservation and sustainability. Energy-saving technologies, such as solar dryers and non-heated greenhouses, are introduced and disseminated among community members. Solar dryers, for instance, utilize sunlight to dry food products efficiently, preserving their quality while reducing reliance on traditional, energy-intensive drying methods. This technology not only lowers energy consumption but also decreases greenhouse gas emissions, contributing to a reduction in the community's carbon footprint. Similarly, non-heated greenhouses are designed to optimize natural light and heat, allowing for extended growing seasons without the need for additional heating. These structures are particularly beneficial in regions with cold climates, enabling the cultivation of crops year-round while minimizing energy use. Through training programs and demonstrations, the Project educates farmers and entrepreneurs on the operation and benefits of these energy-efficient technologies, encouraging their widespread adoption. The emphasis on energy efficiency not only leads to environmental benefits but also generates economic savings for users, supporting the community's sustainable development and resilience to climate change.

Preservation of ecosystems: The Project is steadfast in its commitment to the preservation of ecosystems, implementing initiatives specifically designed to conserve and enhance the natural environments within the project area. For instance, the Project actively engages in the restoration of degraded pastures, a crucial ecosystem for both biodiversity and the local community's livelihood. Through reseeding initiatives and the introduction of perennial grasses, these pastures are not only rehabilitated but also transformed into resilient and productive landscapes that support a diverse array of wildlife while providing essential resources for agricultural activities. Furthermore, the Project introduces and promotes sustainable agricultural practices like organic farming among local farmers. Organic farming practices are encouraged to minimize the use of chemical fertilizers and pesticides, reducing pollution and creating a healthier and more sustainable environment for both wildlife and the community. Through these targeted and practical initiatives, the Project ensures the preservation and enhancement of vital ecosystems within the project area, contributing to biodiversity conservation and the long-term sustainability and resilience of the community. Each activity is carefully planned and executed to provide immediate environmental benefits while laying the foundation for ongoing conservation and sustainable development efforts in the future.

Gender Considerations:

Women's empowerment: The Project is deeply committed to women's empowerment, recognizing the pivotal role women play in community development and sustainability. Through deliberate and strategic initiatives, the Project ensures that women are not only

active participants but also beneficiaries and leaders in the implemented activities. For instance, the Project facilitates women's access to training programs and resources that are crucial for starting and sustaining agricultural businesses. These programs are designed to equip women with the necessary skills, knowledge, and confidence to engage in income-generating activities, thereby promoting their financial independence and economic stability. Furthermore, the Project actively promotes women's participation in decision-making processes at both household and community levels. Special efforts are made to include women in community meetings, planning sessions, and leadership roles, ensuring their voices are heard and their perspectives are considered in shaping the Project's direction and implementation. Through awareness campaigns and educational initiatives, the Project also fosters a community culture that values and supports women's contributions and leadership, challenging traditional gender norms and promoting gender equality. These concerted efforts towards women's empowerment not only contribute to the social and economic well-being of women but also lead to more inclusive and effective community development and environmental conservation outcomes.

Gender-responsive practices: The Project meticulously incorporates gender-responsive practices at every stage to ensure that both men and women equally partake in and benefit from the project's activities. Firstly, a gender analysis is conducted to understand the distinct roles, needs, and priorities of men and women in the community. This analysis informs the design and implementation of activities, ensuring they are sensitive to and supportive of gender differences. For example, training sessions and resources are tailored to address the specific challenges and opportunities faced by women in agriculture, providing them with the skills and knowledge necessary to succeed. The Project also implements flexible scheduling and provides childcare services during training and meetings to accommodate women who have household and caregiving responsibilities. Furthermore, it actively promotes the creation and strengthening of women's groups and cooperatives, providing them with a platform to collaborate, share experiences, and access resources collectively. These groups empower women to take on leadership roles, engage in decision-making processes, and actively participate in community development initiatives. Through these gender-responsive practices, the Project fosters an inclusive and equitable environment where men and women can thrive and contribute to the community's resilience and sustainability.

Mitigating Negative Impacts:

Environmental safeguards: The Project employs stringent environmental safeguards, aligning with the Adaptation Fund's standards, to minimize and mitigate any adverse environmental impacts. For instance, the Project incorporates the use of innovative technologies and organic fertilizers to facilitate climate-smart agriculture. This approach not only enhances the adaptability of agricultural practices but also improves land conditions, reducing environmental degradation. The introduction of organic fertilizers plays a pivotal role in this process, as it helps in maintaining soil fertility without harming its structure or causing pollution, thereby promoting sustainable agriculture. Furthermore, lightweight construction techniques are utilized in the Project, especially in the renovation of existing infrastructure like roads and irrigation networks. These construction methods are environmentally friendly, causing minimal soil disruption and preventing pollution, ensuring that the natural habitat is preserved and protected during the implementation of project activities. The Project also has a well-defined risk identification, mitigation, and prevention strategy. This comprehensive approach ensures that all potential environmental risks associated with the Project's activities are identified in advance, and

appropriate measures are taken to mitigate these risks. For example, in areas where there is a risk of soil erosion due to project activities, preventive measures like the construction of check dams or planting of erosion-resistant vegetation are implemented. Through these and other safeguard measures, the Project ensures that its activities do not result in habitat destruction or significant disruption to the local ecosystems, adhering to strict environmental policies and standards set by the Adaptation Fund. These safeguards are integral to the Project's design and implementation, ensuring it contributes positively to the community while minimizing its environmental footprint.

Social safeguards: The Project is committed to implementing social safeguards to prevent and mitigate any social disruptions and displacement that might occur during its implementation. The safeguards are designed to protect the rights and interests of vulnerable groups within the communities, ensuring that they are not adversely affected by the Project's activities. For instance, the Project takes precautions to avoid causing social disruptions within the communities it serves. This involves careful planning and consultation with community members to ensure that the Project's activities are in line with their needs and expectations, thereby preventing any unintended negative social consequences. Vulnerable groups within the communities are given special attention and consideration in the Project's planning and implementation. These groups are consulted to make sure their rights and interests are protected. The Project ensures that these vulnerable groups, which may include women, youth, and marginalized households, are actively involved in decision-making processes, training programs, and income-generating activities. This approach not only empowers these groups economically and socially but also reduces disparities within the community. Furthermore, the Project is designed to ensure that activities do not inadvertently reinforce existing social inequalities or create new ones. Gender considerations are integrated into every aspect of the Project, adopting gender-responsive approaches to mitigate any potential negative impacts on vulnerable groups. This gender mainstreaming approach ensures that both men and women have equal access to the Project's benefits and opportunities. Overall, the Project's comprehensive approach to social safeguards ensures that the economic, social, and environmental benefits generated are maximized while negative impacts are minimized. The Project is grounded in principles of inclusivity, sustainability, and gender equity, aligning with the Environmental and Social Policy and Gender Policy of the Adaptation Fund.

Gender mainstreaming: Gender mainstreaming is a pivotal aspect of the Project, ensuring that gender considerations are woven into every facet of its planning, implementation, and evaluation. This approach guarantees that the Project does not inadvertently perpetuate gender inequalities but actively works to diminish them, fostering an environment where all participants, regardless of gender, can thrive. The Project is designed with a keen awareness of the distinct needs and challenges faced by different genders in the community. From the outset, it ensures that women are not only active participants but also beneficiaries of the Project's various initiatives. Women are encouraged to engage in decision-making processes, partake in training programs, and involve themselves in income-generating activities facilitated by the Project. This inclusive approach empowers women both economically and socially, thereby narrowing gender disparities within the community. Moreover, the Project adopts Gender-Responsive Practices, tailoring interventions to address gender-specific needs and challenges identified during the planning phase. This might involve creating safe spaces for women to participate in project activities, providing childcare options during training sessions, or

offering programs at times that are convenient for women who may have household responsibilities. These practices ensure that the Project's benefits are accessible and equitable, fostering an environment of gender equality where the contributions of all participants are valued and recognized. Through these concerted efforts in Gender Mainstreaming, the Project not only mitigates potential negative impacts on vulnerable groups but also promotes gender equality as a core principle of its operations, aligning with the Adaptation Fund's Gender Policy.

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

A robust emphasis on enhancing capacities, engaging stakeholders at various levels – from governmental officials to technical experts and local communities – will play a pivotal role in facilitating the integration of novel technologies within target communities. By doing so, the project ensures a financially prudent implementation. The amplification of impacts through training trainers and community champions will enable a broader sphere of influence, indirectly involving a greater number of individuals in the project's ambit. The methodological tool of structured information dissemination will empower a myriad of citizens and civil society organizations, equipping them with skills to participate actively in community life. Farmer field schools and the exchange of experiential knowledge among peers serve as formidable conduits for sharing, replicating, and scaling successful strategies that stem from analogous challenges. This knowledge-sharing ethos fosters adaptive local planning, heightens stakeholder involvement in decision-making, and spurs resilience and adaptation in realms such as agriculture and water management.

The project's execution will be characterized by its efficient cost utilization, achieved through the application of competitive procurement procedures for requisite goods and services, aligned with government regulations and the fiduciary guidance of the Adaptation Fund. Importantly, the project's implementation will predominantly involve community-led efforts, localized procurement of resources and labor, and prudent restrictions on international consultancy and material importation, where feasible. For instance, the installation of locally produced lightweight greenhouses and the construction of solar dryers present cost-effective solutions with positive local market value. A comprehensive analysis will be conducted during project preparation to ensure optimal cost management.

Table 1. - Benefits from proposed interventions, alternatives and reasons for not adopting

Output	Alternative measure	Reason for not adopting	Cost effectiveness rationale	Benefits from proposed intervention
Output 1.1 Irrigation water supply systems in 6 new municipalities are rehabilitated increasing water use efficiency	Usage of underground water and construction of the new water reservoirs	In order to use underground water, wells should be dug and quite powerful pumps should be	Solar-powered pumps are more cost-effective in the long term due to lower operational costs. Also, the repair	Enhanced water use efficiency and reliable water access for agriculture in six municipalities. Increasing the area of irrigated

(12,000 m and 6 solar-powered pumps);		installed. Construction and further maintenance of this option is energy-intensive and costly. In addition, most of the underground waters have a high degree of mineralization and are not always suitable for irrigation. The construction of small reservoirs is also quite expensive and has a significant impact on the environment from the point of view of changing landscapes, in addition, it involves the use of large quantities of synthetic geomembranes, which later become difficult to decompose (almost non-recyclable waste).	and modernization of irrigation water supply systems primarily contributes to the significant reduction of water losses, which today reach almost 70% in the irrigation networks of Armenia. In addition to saving the water, the proposed activity, thanks to the use of new generation pumps, has a high energy efficiency.	land, Increase in residents' incomes from agricultural activities, Reduction of soil degradation processes, Expanding the use of RE technologies, Reduction of GHG emissions.
Output 1.2 Orchards with drip irrigation system and anti-hail nets will be established in 6 communities (12 ha);	Traditional orchards without drip irrigation (sprinkler or surface irrigation) anti-hail nets.	No water saving and lower crop increase; Higher risk of crop damage due to hail. Also, traditional gardens are quite vulnerable to negative effects caused by extreme weather events, such as strong	Drip irrigation results in around 50% of water savings and 50% crop increase Anti-hail nets provide protection, reducing crop loss (by 75-90%) and increasing yield. While establishment of	Resilient and productive orchards established with drip irrigation and protection against climate-related damages. Harvesting of intensive orchards protected by anti-hail nets and

		winds, frost, hail, drought, etc. In addition, from an economic point of view, they have a lower yield, a longer payback period and come under yield 5-7 years after establishment.	traditional orchards requires 3-4 times smaller costs, however it is possible to harvest them in 5-7 years after establishment. Also, their products are not marketable, and they are more vulnerable to extreme weather events and require more irrigation water. In case of intensive orchards, the harvest starts in 2-3 years, the investment is paid back very quickly (2-3 years) and has a smaller demand for irrigation water per unit of output. The income of the farmer from the intensive garden per 1 ha is about 1.5 - 2.5 times more than from the traditional garden.	using drip irrigation system begins within 2-3 years after establishment. Highly marketable crop, which has a high demand and a higher price in the market vs traditional ones. Thanks to these systems, intensive orchards are more stable against the negative effects caused by extreme weather conditions.
Output 1.3 Existing field tracks to remote pastures degraded lands are rehabilitated (15% of field tracks rehabilitated 20 km rehabilitated 25 culverts installed);	Maintaining existing tracks without rehabilitation or construction of the new roads	Continued degradation and accessibility issues. Building new roads leading to pastures and degraded lands is several times more expensive, and if done, significant	Rehabilitation improves durability and access, reducing long-term maintenance costs (up to 1,000 USD per ha per annum in case of moderate scenario).	Improved accessibility to remote pastures and degraded lands, facilitating better land use Rehabilitation of the field tracks is the cheapest way to ensure access to agricultural

		surface of the agricultural land will be affected and causing damage to the farmers.	The construction of new roads will cost about 10 times more than the rehabilitation of existing ones. In addition, this will be done at the expense of currently used agricultural land, removing and accumulating the fertile topsoil of the land in the new road section, as well as will results in changing the agricultural landscape and degrading the new land.	lands, which will make it possible to ensure the unimpeded access of vehicles, their efficient use, leading to the increase of revenues of the framers and reduce the negative effects affecting the degradation of agricultural lands.
Output 1.4 Sowing areas of perennial plants are created reducing rangeland degradation (30 ha of perennial sowing area established);	Cultivation of the annual crops	Annual fodder crops require annual soil cultivation, higher costs, irrigation and fertilization are necessary to obtain a high yield, as well as result in less biomass than perennial crops.	For the perennial fodder crops sowing is done once every 3-5 years, less operating costs are required, they provide 2-3 harvests per year with comparatively larger volumes of biomass obtained. Also, they use natural water efficiently and can grow even in drought conditions, contribute to the improvement of soils and the accumulation of organic nitrogen compounds in them and finally about 1.5-2 times more	Cultivation of perennial forage crops contributes to the reduction of the soil degradation and erosion, is more cost-effective way of obtaining feed and resistant to the effects of extreme weather conditions. They provide a stable high yield and contribute to the growth of the framers' income and adoption of the long-term sustainable land management practicies.

Deleted: Not establishing perennial plant sowing areas

Deleted: Continued rangeland degradation

Deleted: Perennial plants improve soil health and reduce degradation, supporting sustainable agriculture

Deleted: Reduction in rangeland degradation and promotion of biodiversity and soil health

			profitable than annual fodder crops.	
Output 1.5 Community pastures and hay meadows are rehabilitated and improved their adaptive capacity (500 ha hay meadows, pastures and arable lands rehabilitated);	Not rehabilitating pastures and hay meadows and temporarily suspension of their usage	Lower productivity and adaptive capacity. Longer rehabilitation periods. Costly option. Increased pressure on other types of the land.	Rehabilitation enhances productivity (for up to 800 USD savings per ha per annum as per moderate scenario) and resilience to climate changes. Investments are returning in 2-3 years' period.	Enhanced adaptive capacity and productivity of community pastures and hay meadows
Output 1.6 Livestock watering points are constructed (5 watering points constructed);	Not constructing livestock watering points and using natural sources of the water.	Limited water access for livestock. Usage of the natural sources for watering has a number of negative environmental and economic consequences and is not always advisable: - They are quite far from animal pastures, - Groups of animals trample their coastal areas and destroy vegetation, - They can cause the spread of infectious and invasive diseases of animals.	Watering points ensure reliable water access, supporting healthy livestock. The establishment of watering points for animals in pastures is a very important activity from the point of view of the development of livestock breeding and economic efficiency in communities. It contributes to: - efficient management of pastures and full use of their potential, - the use of remote pastures, - increasing animal food yield, especially milk yield, - for the prevention of	Improved water access for livestock, supporting sustainable livestock farming practices. Creation of watering points for agricultural animals in pastures contributes to: - constant access to drinking water for animals in pastures, - reduce the need to transport animals over long distances, - ensuring the purity and quality of drinking water for animals, - the food yield of animals increases, - reduces the pressure on natural watercourses and springs,

			water-borne infectious and invasive diseases, - reduction of unnecessary movements of groups of animals in pastures, - reducing anthropogenic pressure on pasture lands.	- prevents the destruction of vegetation and soil degradation in coastal and wetland areas of watercourses and springs, - reduces anthropogenic pressure on biodiversity.
Output 1.7 Architectural and design drawings and estimates;	There is no alternative, as it is required by RA legislation.	Otherwise, it can lead to fines and illegal actions.	Architectural and construction design can propose the best and most effective options for solving the problem, leading to cost reduction, increasing the comfort of further operation and extending the life cycle.	Required by RA legislation and proposes correct architectural solutions. Also increases the stability of the structure and duration of operation.
Output 1.8 Capacity building for improved grazing management in targeted municipalities	The alternative can be to use the services of specialized structures for the improvement and management of the pastures, through handing over the actual management of pastures under their control.	It contradicts to the logic and principles of community development and community property management, and will require additional financial resources from the community. In addition, there are currently no structures in Armenia with a sufficient number and appropriate capacities	For the services of specialized structures the communities has to pay significant amounts, that can become additional burden for the communities.	Strengthened capacity for improved grazing management in targeted municipalities through: - Increased level of awareness and knowledge of the population of the communities regarding the management and improvement of pastures, - Nurturing new skills in pasture management

Deleted: Not providing architectural and design drawings

Deleted: Lack of clear implementation guidelines

Deleted: Drawings and estimates guide implementation, improving efficiency and cost-effectiveness

Deleted: Precise and cost-effective implementation of project interventions facilitated

Deleted: Not conducting capacity building

Deleted: Lack of knowledge and skills for sustainable grazing

Deleted: Capacity building empowers municipalities, promoting sustainable practices and improving productivity

		specialized in improvement and management of pastures.		and improvement,
Output 2.1 Smart agricultural practices in 6 municipalities are introduced, establishing 3 ha berry orchards with drip irrigation system	Establishment of the traditional berry orchards	Traditional orchards do not ensure the high yield, are not resistant to pests and diseases. The irrigation systems used in traditional orchards are quite inefficient and require large volumes of irrigation water.	Drip irrigation systems are more water-efficient and cost-effective in the long term. Intensive orchards secures stable yield from the 2-3rd year. The investment is paid back in 2-3 years. Smaller consumption of the irrigation water per unit of output. These orchards are twice as profitable if compared with traditional once.	Efficient water use for agriculture, conserving water resources, improving crop yields.
Output 2.2 Non-heated, lightweight greenhouses are constructed in priority community areas (3000m2 of greenhouses constructed 40 beneficiaries)	Standard agricultural practices.	Negative impact of climate change in Armenia affects crop production significantly. Cultivation in open ground conditions is quite risky and not always result in sufficient income for farmers.	This requires certain costs (15-30 US dollars per 1 square meter) but under the conditions of proper management, these costs will be paid back in 3 years. In addition, farmers' income stability increases and vulnerability to extreme weather events decreases. Cultivation in	Non-heated, lightweight greenhouses make it possible to: - extend the vegetation period of plants by up to 2-3 months with no additional costs, - prevent the negative effects of extreme weather events, - ensure high yield and good quality of the product, - increase

			closed ground conditions is 1.5-2 times more profitable than in open ground conditions.	farmers' incomes from crop cultivation, - promote the development and spread of indoor crop production.
Output 2.3 Solar dryers are installed in priority community areas (40 solar dryers constructed 40 beneficiaries)	Traditional drying methods	Less efficient and dependent on weather conditions	Solar dryers are energy-efficient and provide a reliable method for drying agricultural products, enhancing their shelf life and quality	Installation of 40 solar dryers in priority areas, providing reliable drying solutions for agricultural products
Output 2.4 Community management and business plans are formulated for climate smart agricultural value chains (5 business plans formulated)	To carry out activities in accordance with the currently existing five-year community development plans, where the principles of climate-smart agriculture are not included.	The principles of climate smart agriculture are not included in the five-year development plans of the community, they do not provide an opportunity to ensure resistance to the challenges in the field. This option cannot ensure the proper level of development of the field and adaptation of the CC.	Community management plans and business plans, developed to address issues arising from community needs and seeking to promote climate-smart agricultural value chains, have a clear investment size and payback period, which makes it possible to attract resources not only from community and government sources, but also private sector.	The development of 5 management and business plans will make it possible to increase the addressability and efficiency of investments made by the community and the private sector.
Output 2.5 Agrivoltaic systems are piloted (10 installations with 30 KW of installed capacity	Using agricultural lands for energy generating purposes (due to attractive	Using agricultural land for the construction of solar power stations is one of	Agrivoltaic systems are sustainable and provide renewable energy for agricultural	Piloting of 10 agrivoltaic installations, providing sustainable energy solutions for agriculture

Deleted: Absence of community management and business plans

Deleted: Lack of structured approach to developing climate-smart agricultural value chains

Deleted: Formulating business plans provides a roadmap for developing and managing climate-smart agricultural value chains effectively

Deleted: Formulation of 5 business plans for climate-smart agricultural value chains, providing a structured approach to development and management

Deleted: Traditional energy sources for agriculture

Deleted: Higher operational costs and environmental impact…

each)	electricity tariffs for households and SMEs), thus reducing the availability of the agricultural land	the main tendencies during the last years. On the one hand, it is very important from the point of view of the country's energy security, but on the other, it has a significant negative impact on the agricultural sector: natural fodder and areas necessary for the preservation of biodiversity are reduced.	operations, reducing operational costs and environmental impact. Also, they substitute (due to available net-metering arrangements) expensive energy from the Electricity Network and result in approximately 200 USD of savings per household.	
Output 2.6 Demonstration sites for sustainable land management practices are constructed in each municipality;	Conducting training on sustainable land management practices	Conducting trainings increases the level of awareness and knowledge of the participants to a certain extent, but it does not always become a basis for the practical application and implementation of these practices in everyday life. The creation of demonstration sites for sustainable land management practices will have a more targeted impact on land users and the latter will put these into practice.	Demonstration sites provide practical examples and insights into effective sustainable land management practices. Implementation of sustainable soil management practices requires a period of time (at least 3-5 years) to demonstrate its benefits and increase plant yields. This activity can demonstrate its cost-effectiveness in the long term. Can significantly reduce operating costs (chemical fertilizers and pesticides).	Construction of demonstration sites in each municipality, promoting sustainable land management practices through: - continuous improvement of soil quality, - increase of microflora, - increase of crop yield, - increasing carbon compounds in the soil and reducing greenhouse gas emissions, - reducing the use of pesticides and chemical fertilizers, - increased farmers' incomes.

Deleted: Absence of demonstration sites

Deleted: Lack of practical examples for sustainable land management practices

Output 2.7 2 agro-acceleration hubs are piloted to enhance integration with existing supply chains;	Establishment of the agricultural advisory centers	Under the current circumstances of the development of new agricultural technologies and practices, there is a strong need for rapid dissemination and implementation of the gained knowledge and under the current conditions of the activity of the consulting centers, this process will proceed very slowly. On the contrary, agro-acceleration centers can contribute to a faster and more practical dissemination of knowledge and experience, also providing mentorship support.	Agro-acceleration hubs support and enhance integration with existing supply chains, promoting the development of agricultural enterprises	Piloting of 2 agro-acceleration hubs, supporting integration with supply chains and promoting agricultural enterprise development
Output 2.8 2 model agrotourism facilities are piloted in every community;	Absence of model agrotourism facilities	Lack of tourism-related revenue streams for communities	Model agrotourism facilities provide additional revenue streams for communities and promote local agricultural products	Piloting of 2 model agrotourism facilities in each community, promoting tourism and local agricultural products
Output 2.9 New varieties of dry and heat resistant crops	Traditional crop varieties	Susceptible to dry and heat conditions. The use of	New varieties of dry and heat-resistant crops provide higher	Piloting of new dry and heat-resistant crop varieties,

Deleted: Absence of agro-acceleration hubs

Deleted: Lack of support and integration with existing supply chains…

are piloted;		traditional crops and varieties under existing circumstances of climate change are not justified, and are economically non-profitable. This results in the need to introduce new crops and their climate-resistant varieties.	yields under adverse climate conditions, promoting food security. The introduction of the new climate-resistant crops and their varieties can reduce irrigation water consumption by up to 30% and increase incomes of the beneficiary farmers by 50-80%.	improving crop yields under adverse climate conditions. Introduction of the new crops in crop rotations, Increasing incomes of the beneficiary farmers, Minimization of the anthropogenic pressure on the natural ecosystems.
Output 3.1 Farmer field schools and extension services have been provided to share best practices of climate smart agriculture and LDN for the targeted communities (200 beneficiaries)	Traditional agricultural practices without extension services	Limited knowledge-sharing and adoption of best practices	Farmer field schools and extension services facilitate effective knowledge transfer and adoption of climate-smart agriculture practices	Provision of farmer field schools and extension services for 200 beneficiaries, promoting climate-smart agriculture and Land Degradation Neutrality (LDN)
Output 3.2 Best practices examples and training material on natural and agricultural ecosystems' adaptation under the conditions of climate change are formulated, disseminated and made accessible (4 training programs and thematic topics);	An alternative is incorporation of this knowledge in the materials for VET and university education curricula.	Requires longer time, approvals from many authorities and significant financial resources in the form of publishing costs.	Formulated and accessible training material ensures standardized and easily accessible knowledge resources for climate adaptation in natural and agricultural ecosystems	Formulation and dissemination of best practices examples and training material on climate adaptation, benefiting various stakeholders
Output 3.3 Community			Community-based	Formulation of 4 community-

Deleted: Lack of organized training material

Deleted: Inconsistent and inaccessible knowledge resources

Deleted: Absence of community-based adaptation planning

Deleted: Lack of structured approach to climate adaptation at the community level

based adaptation planning is conducted for target communities (4 community-based adaptation plans formulated)	Implementation of the adaptation planning at the community level, using their resources (including financial).	Experience demonstrates that communities do not yet realize the need and benefits of having such a strategy/plan. Also, lack of financial resources and management capacities makes this option unrealistic and difficult to implement in the mid-term perspective.	adaptation planning provides a structured and participatory approach to climate adaptation, ensuring community involvement and buy-in	based adaptation plans, providing a roadmap for climate adaptation in target communities
Output 3.4 Strategies for sustaining climate smart agriculture and LDN in target areas have been formulated (4 community-based strategies adaptation plans formulated);	Alternative is to include this into the 5-year community development plans.	Lack of knowledge and respective skills at the community level makes this unrealistic option.	Formulating strategies for sustaining climate-smart agriculture ensures long-term viability and success of implemented practices	Formulation of 4 strategies for sustaining climate-smart agriculture and LDN in target areas, supporting long-term sustainability
Output 3.5 Capacities of local stakeholders, including municipalities, CSOs and managers of protected areas (women, youth, environmental) are advanced;	Limited capacity-building initiatives for local stakeholders	Inadequate skills and knowledge among local stakeholders	Advancing capacities of local stakeholders empowers them to effectively participate in and contribute to climate-smart agriculture initiatives	Advancement of capacities of local stakeholders, including municipalities, CSOs, and managers of protected areas, enhancing their ability to support and implement climate-smart initiatives

Deleted: Absence of sustainability strategies for climate-smart agriculture

Deleted: Lack of long-term planning for sustainable practices…

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

exist.

Proposed Project is architected around key national development strategies and aligned with relevant sectorial policies, frameworks and strategies at the national and sub-national levels. More specifically, the alignment is demonstrated through:

- **National Adaptation Plan (NAP), Sectorial Adaptation Plans (SAPs for Water and Agriculture), and Marz Adaptation Plans (MAPs)**: The project is aligned with the triangular adaptation building framework comprised of NAP, SAPs and MAPs that provides a roadmap for adapting to climate change, identifying priorities, and integrating adaptation into national planning processes. The Project is aligning its objectives, activities, and outcomes with the priorities and goals outlined in the NAP, SAPs and MAPs. More specifically, it targets increasing adaptive capacities of vulnerable regions/municipalities and proposes solutions that are prioritized through the documents (addressing water scarcity through utilisation of water saving technologies, cultivating climate resilient crops, increasing awareness and capacity of households and businesses);
- **National Development Plans:** The Project is aligned with the country's national development plans (e.g. Government Strategy for 2022-2026), which outlines the government's overall development objectives and strategies. By aligning with this document, the Project can contribute to the achievement of broader national development goals and specific targets, such as increasing intensive orchards by 1,000 per annum with specific focus on vulnerable regions, supporting introduction of drip irrigation at the parcels less than 3 ha (average national) and supporting greenhouse economies through awareness raising, demonstration projects and other regulatory/fiscal incentives
- **Sectoral Strategies and Plans:** The Project is aligned with the “Strategy of the Main Directions Ensuring Economic Development in Agricultural Sector of the Republic of Armenia for 2020-2030”, other relevant sectoral strategies and plans, such as that forestry, water resources, and disaster risk reduction. This alignment ensures that the project contributes to the resilience and sustainability of key sectors. As per the strategy, the core of the agricultural policy will be the increase of agrarian efficiency, increase of the food security level, introduction of modern technologies, increase of exportation volumes, growth of profitability of all entities engaged in the entire value chain of agriculture - small households, farming cooperatives, processors, and exporters.
- **National Communication N4 to UNFCCC:** The Project considers the climate vulnerabilities and adaptation priorities outlined in the country's National Communications N4 to the United Nations Framework Convention on Climate Change (UNFCCC). These communications provide an overview of the country's climate change vulnerabilities, adaptation efforts, and capacity-building needs;
- **Stakeholder Consultations:** Engagement with national and sub-national stakeholders, including government agencies, local authorities, and civil society organizations, has been crucial to understand their priorities and ensuring the Project's alignment with their needs and aspirations;
- **Policy Integration:** The Project explicitly communicates how its objectives and activities contribute to the achievement of national and sub-national sustainable

development objectives. It also outlines how it aligns with existing policies and how it complements other ongoing initiatives;

- **Reporting and Coordination:** The project will report its progress and outcomes to relevant government authorities, ensuring transparency and accountability. Coordination with existing development partners and projects will help to avoid duplication and enhance synergies;
- **Long-Term Vision:** The Project's design is structured around the long-term vision of the country's sustainable development. By embedding adaptation efforts within broader development goals, the project contributes to lasting impacts and sustainability;

Demonstrating alignment with national and sub-national sustainable development strategies enhances the Project's credibility, fosters collaboration with government agencies and stakeholders, and increases the likelihood of sustained support for the Project's implementation and its long-term benefits to the country's development goals.

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

General approach

Ensuring alignment with Adaptation Fund's Environmental and Social Policy require that projects supported address the adverse impacts of climate change while avoiding unnecessary environmental and social harms. The relevance of the Project to the ESP can be described as follows:

Environmental and Social Management Commitment: The Project demonstrates a strong commitment to environmental and social management by incorporating an environmental and social management system. The implementing entities involved in the project will be responsible for assessing and addressing potential environmental and social risks throughout the project cycle. They will identify measures to avoid, minimize, or mitigate these risks, ensuring that the project aligns with the principles outlined in the ESP.

Compliance with Environmental and Social Principles: The Project adheres to the environmental and social principles set forth in the ESP. It ensures compliance with applicable domestic and international laws and respects human rights, gender equity, and the rights of marginalized and vulnerable groups. The project's design prioritizes fair and equitable access to benefits, while minimizing adverse effects on public health and cultural heritage. Additionally, the Project promotes the conservation of biodiversity and efficient use of resources, including pollution prevention and resource efficiency.

Environmental and Social Assessment and Management: The Project implements a screening process to identify potential environmental and social impacts and categorizes projects/programmes based on their severity. Category A projects/programmes with significant adverse impacts and Category B projects/programmes with less adverse impacts are subjected to a thorough environmental and social assessment. The assessment includes identifying risks and proposing measures for mitigation and

management. Implementing entities are responsible for monitoring and reporting on the status of these measures throughout the project's life.

Stakeholder Engagement and Grievance Mechanism: The Project incorporates stakeholder engagement and consultation to ensure the informed participation of all relevant stakeholders. It allows affected communities and individuals to voice their concerns through a grievance mechanism, which provides a transparent and accessible process for addressing complaints related to environmental or social harms caused by the project.

Specific regulations

Armenia lacks national technical standards for project activities like tree planting, forest restoration, and high-value agriculture related to climate change. The project will adhere to international best practices and comply with Armenian law during its preparation, including conducting necessary environmental and social impact assessments. No significant mitigation measures are identified. Activities involving technology transfer, training, or community participation will align with Armenia's labor codes and gender equality targets.

Improvements to arable lands, meadows, and pastures fall under the RA Land Code and specific government decisions, with projects aimed at increasing land fertility and use being regulated by Item 5 of Article 2 of the Land Code. Pasture and meadow improvements comply with government decisions N 1477-N (28.10.2010) and N 389-N (14.04.2011). Landscape restoration aligns with the RA strategy and government protocol decision N29 (19 July 2012), adhering to the European Landscape Convention ratified in 2004.

Midfield road renovations will follow the Construction Norms of the RA Urban Development Committee. Some project activities necessitate a comprehensive review and Environmental Impact Assessment (EIA) expertise as per Armenian EIA law based on specific details that will be determined during further stages of the Project (according thresholds of the activities described in the RA Law on Environmental Impact Assessment and Expertise). Project pre-estimation documents and management plans will be formulated during implementation. Organizations developing these plans will conduct the EIA expertise if required. Post-agreement, a tender will be announced to select these organizations, with the tender process lasting approximately 1.5 months. Selection of the organizations shall be done based on presented capacity for implementation of the EIA and urban development expertise. Activity-implementing organizations will be selected in accordance with RA procurement law.

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Compliance with the following laws regulating agricultural activities will be ensured:

- **Law on Amelioration of Agricultural Lands** (May 20, 2005): this law regulates the relations related to amelioration of agricultural lands for the purpose of maintenance and increase in soil fertility, protection from erosion and salting and inclusion of less fertile soils in the agricultural circulation.
- **Law on Phytosanitation** (November 27, 2006): this law regulates in the sphere of phytosanitation the relations between the authorized State body (RA Ministry on Agricultural) and the physical and legal entities operating in Armenia. The law

prescribes details related plant protection means, pesticides and fertilizers, particularly their import and transportation, use, maximum permissible concentration residues in soil and plant product. The responsibilities of the physical and legal entities involved in agricultural activity in case of using plant protection means and fertilizers, as well as soil cultivation have been defined by the law.

- **Law on Fodder** (June 9, 2008): this law regulates the import, export, transportation, use, marketing, labeling and packaging of fodders, as well as fodder additives. Besides, this law prescribes the requirements for production, transportation and maintenance of silage fodders.
- **Law on Organic Agriculture** (April 8, 2008): the law regulates organic production of agricultural products and raw materials, storage, processing, transportation and sales, as well as relationships associated with the harvesting of wild plants, sets the legal basis for the maintenance of organic agriculture principles, the basic requirements for product turnover , and the directions of state support obligations.
- **Law on Food Safety** (November 27, 2006): the law regulates food, food contact materials and food additives and biologically active in the import, export, production, handling, processing, packaging, labeling, transportation, storage, sale, trade and public catering provision of services in the field of safety relationships.
- Land Code (May 02, 2001): The preamble of the Land Code stipulates that the possession, disposition and use of lands shall not cause damage to the environment, defensibility and security of the country shall not violate the rights and lawful interests of citizens and other persons. The Land Code defines the main directions for use and disposition of the state lands, included those allocated for various purposes, such as agriculture, urban construction, industry and mining, energy production, transmission and communication lines, transport and other purposes. The Code also defines the lands under the specially protected areas as well as forest, water and reserved lands. It also establishes the measures aimed to the lands protection, as well as the rights of state bodies, local authorities and citizens towards the land.
- Water Code (October 10, 2002): The main purpose of the Water Code is to provide the legal basis for the protection of the country's water resources, the satisfaction of water needs of citizens and economic sectors through effective management of water resources, and safeguarding the protection of water resources for future generations. The Water Code addresses the following key issues: responsibilities of state/local authorities and public, development of the National Water Policy (2005) and National Water Program (2006), water cadaster and monitoring system, public access to the relevant information, water use and water system use permitting systems, trans-boundary water resources use, water quality standards, hydraulic structures operation safety issues, protection of water resources and state supervision.
- Law on Environmental Impact Assessment and Expertise (June 21, 2014): The Law provides legal basis undertaking state environmental expertise of planned activities and concepts and presents standard steps of Environmental Impact Assessment process. The Law establishes general legal, economic, and organizational principles for conducting mandatory State EIA of various types of projects and concepts of sectorial development. According to this law, activities are classified into 2 categories: A and B. The categories are defined on the basis of the volume of the activity, characteristics and the level of impact on environment. During EIA expertise process, as per the RA Government decree dated 19 November, 2014 No. 1325-N

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on “The procedure to conduct public notification and consultations”, all the interested parties: households within the project areas, interested state bodies, being responsible for regulating this or that aspect, project area located land plot owners or leases and etc. shall be notified either by community leaders or mass media or postal deliveries about the Project, the place and time for public consultations in order to be informed about the benefits and impacts of the Project to get their feedback.

The mentioned legislation is the basic law, which is applied and used by the RA Ministry of Environment. It is also necessary to take into account the following main components of the relevant environmental legislation:

- Law on Specially Protected Areas (1991, updated in 2006),
- Law on Ensuring Sanitary-epidemiological Security of the RA Population (1992);
- Law on Atmospheric Air Protection (1994);
- Law on the Protection and Use of Fixed Cultural and Historic Monuments and Historic Environment (1998);
- Law on Environmental and Nature Use Charges (1998);
- Law on Flora (1999);
- Law on Fauna (2000);
- Law on Hydrometeorological Activities (2001);
- Law on Environmental Education (2001);
- Subsoil Code (2002);
- Law on Seismic Protection (2002),
- Law on Wastes (2004);
- Law on Water Users' Associations and Companies (2002);
- Law on Environmental Oversight (2005);
- Forest Code (2005);
- Law on Rates of Environmental Charges (2006);
- Law on National Water Program (2006);
- Law on Land Use Control and Protection (2008);
- Decision N 71-Ն of the Government of the Republic of Armenia of January 29, 2010 "On approving the Red Book of Animals of the Republic of Armenia";
- Decision N 72-Ն of the Government of the Republic of Armenia of January 29, 2010 "On approving the Red Book of Plants of the Republic of Armenia";
- Decision No. 781 of the Government of the Republic of Armenia of July 31, 2014 "On defining the procedure for their use for the protection of flora objects of the Republic of Armenia and their reproduction in natural conditions";
- Order of the RA Minister of Health on approving the sanitary rules and norms of "Sanitary living rooms of employees in organizations" N 2.2.8-003-12;
- Decision No. 438 of the Government of the Republic of Armenia of April 20, 2002 "On Approving the Procedure for State Registration, Study, Preservation, Strengthening, Repair, Restoration and Use of Immovable Historical and Cultural Monuments".

The agricultural sector is governed by a set of technical standards aimed at ensuring the quality, safety, and sustainability of production processes and products. These standards cover a wide range of activities, from grain production to meat processing, and from dairy products to the use of fertilizers and pesticides. Below is a detailed summary of the technical standards required for various agricultural activities in Armenia, presented in bullet points with a brief description of their essence:

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- **Technical regulation for grain production, storage, processing and utilization:** specifies the requirements for the cultivation, harvesting, storage, processing, and end-use of grains to ensure quality and safety;
- **Technical regulation for fresh fruits and vegetables:** outlines the standards for the production, handling, and sale of fresh fruits and vegetables to maintain freshness and prevent contamination;
- **Technical regulation for meat and meat products:** defines the criteria for the processing, storage, and distribution of meat and meat products to ensure hygiene and safety;
- **Technical regulation for milk, dairy products and their production:** details the standards for the production, processing, and storage of milk and dairy products to maintain quality and prevent spoilage;
- **Technical regulation for materials in contact with food and their labeling:** specifies the requirements for materials that come into contact with food and the necessary information that must be included on labels;
- **Technical regulation for food hygiene:** defines general hygiene practices that must be followed in the production and handling of food products to prevent contamination and ensure safety;
- **Technical regulation for food additives:** specifies the standards for the use of additives in food products to ensure they are safe and appropriately used;
- **Technical regulation for mineral fertilizers:** sets the standards for the production, packaging, and use of mineral fertilizers to ensure they are safe and effective;
- **Technical regulation for pesticides and agrochemicals production, packaging and circulation:** specifies the requirements for the production, packaging, and use of pesticides and agrochemicals to ensure they are safely and effectively used;

Eventually, the requirements of the above-mentioned laws are monitored by the relevant state bodies and without their approval for example on the technical instructions of the safe food, organic agriculture production and the submittal of conformity certificates no food processing will be possible to implement.

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

The mapping of the projects implemented in the beneficiary regions has been carried out with the aim to ensure complementarity and avoid duplication of the efforts:

The €9.7 million **EU-Green Agriculture Initiative (EU-GAIA) in Armenia**, funded by EC funds, is dedicated to fostering sustainable and inclusive growth in the northern regions of the country through the promotion of green agriculture and enhanced local value. Implemented from 2019 to 2024, this project has a direct impact on 2,000 beneficiaries, including agribusinesses, extension services, NGOs, and educational institutions.

EU-GAIA has a comprehensive vision for its impact, encompassing the following key

outcomes:

- **Supportive environment:** EU-GAIA aims to advocate for policies, legal frameworks, and institutions that champion green and inclusive agriculture. It prioritizes human rights in its approach.
- **Empowered agribusinesses:** the initiative focuses on enhancing access to infrastructure, green technologies, best practices, and markets, ultimately leading to improved employment conditions for those involved.
- **Enhanced competitiveness:** EU-GAIA seeks to boost the productivity and market presence of selected agribusinesses through various means, including inputs, equipment, infrastructure, and services. Some components of this outcome are implemented in partnership with UNDP.
- **Organic edge:** the initiative also aims to strengthen the competitiveness of organic agribusinesses through similar support mechanisms.

While the initiative directly benefits 2,000 individuals, it indirectly impacts around 10,000 people. Local communities and households gain access to green agricultural practices and products, while business service providers, traders, retailers, and the tourism sector thrive on the increased diversity, volume, and quality of local agricultural offerings.

EU-GAIA's focus on nurturing a vibrant and sustainable agricultural sector in northern Armenia sets the stage for shared prosperity and a brighter future for the region.

The Sustainable and Inclusive Growth in Mountainous Armenia (SIGMA) Project implemented by DAI and AM Partners adopts a Market Systems Development (MSD) approach to promote growth, primarily in the agricultural sector, within impoverished rural regions of Armenia. During its inception phase, the project collaborated with local and international experts in various fields, including agricultural productivity, value chains, political economy analysis, gender, and inclusion. This phase aims to design a comprehensive plan for facilitating grant partnerships that will catalyze and strengthen local market economies. The ultimate goal is to establish a resilient and sustainable market system that operates independently without ongoing external support.

MSD programs like SIGMA take a research-oriented, long-term strategic approach to identify opportunities within specific rules, regulations, and geopolitical contexts that can enhance economic productivity in targeted areas. Once these opportunities are identified, DAI, in partnership with smallholder farmers or business owners, creates a comprehensive workplan for activities and provides up to half of the funding for the program. This financial support reduces the partner's risk and offers funding that might not otherwise be available. Additionally, requiring the partner to contribute half of the funds promotes independence and self-resilience, which can be sustained after the partnership concludes. Through strategically identified and developed partnerships, SIGMA aims to foster a more robust and self-sustaining local market economy.

MAVETA, the Modernizing Vocational Education and Training in Agriculture project, is dedicated to the revitalization of Armenia's rural economy through the enhancement of the country's agricultural vocational education and training system (A-VET). This €1.8 million initiative, generously funded by the Swiss Agency for Development and Cooperation, places a strong emphasis on fostering sustainable,

climate-friendly growth, elevating incomes, and promoting self-employment opportunities for rural workers in agriculture and related fields.

MAVETA's strategic interventions target a broad spectrum of beneficiaries, including both men and women, with a particular focus on youth and vulnerable groups. The project operates in two core areas:

- **Development of a robust dual A-VET system:** this encompasses the creation of market-oriented curricula, the transformation of VET institutions into local knowledge hubs, collaboration with private companies to facilitate co-creation and work-based learning, and an emphasis on promoting accessibility for women and vulnerable populations.
- **Strengthening the legal and regulatory framework:** MAVETA actively advocates for the revision of laws and regulations, fosters collaboration among key stakeholders, and enhances the capacities of both public and private sector entities to adapt the A-VET system to incorporate work-based learning principles.

Through these critical endeavors, MAVETA seeks to bridge the gap between theoretical knowledge and practical skills, thereby stimulating innovation and entrepreneurship within Armenia's agricultural sector. With a projected impact on over 900 direct beneficiaries, this project holds significant promise for the revitalization of Armenia's rural economy and the enhancement of the livelihoods of its agricultural workforce.

The Armenia Workforce Development Activity is a five-year program generously funded by the United States Agency for International Development (USAID) and skillfully executed by the Enterprise Incubator Foundation (EIF) in partnership with several consortium members, including the Armenian National Agrarian University (ANAU) Foundation, Fund of Armenian Relief (FAR), and Civitta Armenia.

This initiative is driven by the ambition to equip 10,000 young individuals aged 15-29, hailing from all regions (marzes) of Armenia, with the essential skills demanded by the contemporary labor market, with a special focus on ensuring that 7,000 of them gain access to improved employment opportunities.

Launched in October 2021, the program is committed to offering youth and women avenues for enhancing their skill sets in alignment with labor market requisites, thereby facilitating their employment prospects in the spheres of Information and Communication Technology (ICT)/high-tech, agriculture, and hospitality.
A pivotal facet of this initiative revolves around empowering youth, women, and individuals with disabilities (PWD) to actively participate in the labor market. This involves fostering strategic collaborations with the private sector, the Armenian government, and educational institutions. The goal is to challenge societal stereotypes, reshape perceptions, and usher in transformative changes within the policy and regulatory landscape.

The Armenia Workforce Development Activity is guided by three primary objectives:

- **Bridging the skills gap**: this objective entails forging partnerships with industry leaders in the ICT/high-tech, agriculture, and hospitality sectors to craft skill-building programs aligned with market needs. The program aims to prepare a workforce proficient in these

domains, who can either cater to industry requirements or embark on their entrepreneurial ventures. By working closely with Technical Vocational Education and Training (TVET) institutions, higher educational bodies, and the private sector, the program identifies gaps in educational curricula and labor market skill mismatches. It extends support to upgrade educational programs and offers Train-the-Trainer (ToT) initiatives for educators.

- **Shifting societal perceptions**: under this objective, the program launches a series of awareness campaigns designed to reach out to youth groups, PWDs, and women, motivating them to participate in the available programs. These campaigns also focus on highlighting the success stories and achievements of program participants, while engaging private companies to recruit graduates from non-formal education programs, TVET institutions, and higher education. Through a diverse array of media platforms, seminars, events, and social media initiatives, the program encourages positive discussions around diversity and inclusion. It amplifies the voices of youth, encouraging their active civic and economic participation.
- **Enhancing the labor market environment:** this objective entails active collaboration with the Government of Armenia and relevant authorities to support their reform agenda through project activities. It leverages government actions that facilitate project activities, thus contributing to improvements in the operating and enabling environment for labor market development.

In summary, the Armenia Workforce Development Activity is a multifaceted program aimed at empowering Armenia's youth and women, aligning their skills with labor market needs, and challenging societal norms to create a more inclusive and prosperous future for the country.

There is no duplication of project funding with activities or projects supported by other climate financiers or the Government. During stakeholder consultations the communities were asked questions about previous and ongoing support received from government and non-government organizations. The proposed project will not duplicate efforts, but rather capitalize on lessons learned and platforms created for uptake of the high-value agriculture ecosystem approach. The project aims however to build possible framework for land-based adaptation measures in Armenia, which could be taken further by development partner, government or climate funds (such as Green Climate Fund). During project preparation consultations will be held with other government departments and development partners to avoid any risk of overlapping or weak coordination of activities.

However, to avoid duplication with other funding sources in the future, the Project will implement several strategies to ensure coordination and collaboration with existing initiatives. Here's how the Project can take steps to prevent duplication:

- **Stakeholder Mapping:** Identify all relevant stakeholders, projects, and programmes operating in the target area. This includes government agencies, non-governmental organizations, international organizations, and other development partners;
- **Engage in Consultations:** Initiate consultations with relevant stakeholders to understand ongoing and planned projects. This will help to identify areas of

alignment and potential overlaps;

- **Coordination Mechanisms:** Establish coordination mechanisms, such as regular meetings, workshops, and working groups, to share information and updates with other projects. This will encourage collaboration and ensure that everyone is aware of each other's activities;
- **Information Sharing:** Develop a platform or system for sharing information about the Project's goals, activities, and progress with other relevant projects. This transparency will help to avoid unintentional duplication;
- **Gap Analysis:** Conduct a thorough analysis to identify gaps or areas not covered by existing initiatives. Tailor the proposed Project's activities to address these gaps, ensuring that resources are used effectively;
- **Complementary Activities:** Collaborate with other projects to identify areas where activities can complement each other. For instance, if another Project is focusing on water resource management, this Project could focus on sustainable agriculture practices;
- **Resource Pooling:** Explore opportunities for sharing resources, expertise, and capacities with other projects. This will lead to more efficient utilization of resources and avoid duplication of efforts;
- **Clearly Defined Roles:** Clearly define the roles and responsibilities of each project and ensure that there is no overlap in terms of geographical coverage, target beneficiaries, and activities;
- **Joint Planning:** Engage in joint planning sessions with other projects to develop a coherent and integrated approach to addressing common challenges;
- **Regular Monitoring and Feedback:** Maintain regular communication and feedback loops with other projects to monitor progress and adjust activities if needed to prevent overlap;
- **Scale and Scope:** Ensure that the scale and scope of the proposed Project aligns with the specific niche it aims to fill, and that it doesn't duplicate efforts that are already being adequately addressed by other initiatives;
- **Reporting and Evaluation:** Include reporting requirements that detail how the project is coordinating with other initiatives to prevent duplication. Regular evaluation can help assess the effectiveness of coordination efforts;

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

The learning and knowledge management component of the project plays a pivotal role in capturing, organizing, and disseminating valuable lessons learned throughout the project lifecycle. This process ensures that experiences, successes, challenges, and best practices are shared effectively to inform future actions, policies, and projects. The learning and knowledge management framework comprises the following key aspects:

Data Collection and Documentation: Relevant project activities, outcomes, and impacts are systematically recorded. This includes comprehensive documentation of implementation processes, methodologies, and stakeholder engagement.

Monitoring and Evaluation: Robust monitoring and evaluation mechanisms are established to track progress, assess outcomes, and gauge the effectiveness of interventions. Regular evaluations provide insights into what works, what needs adjustments, and what lessons can be drawn.

Lesson Identification: Throughout the project, lessons learned, both positive and negative, are identified through a participatory process involving stakeholders. This includes community members, experts, project staff, and relevant authorities.

Knowledge Sharing Workshops: Periodic workshops and forums are organized to facilitate the exchange of experiences and knowledge. Stakeholders convene to discuss challenges faced, strategies employed, and innovative solutions developed.

Knowledge Repositories: A digital repository is established to compile project-related documents, reports, case studies, and resources. This accessible database ensures that stakeholders can access valuable information and lessons learned at any point.

Capacity Building: Targeted capacity-building activities are conducted to equip stakeholders with skills in documentation, knowledge sharing, and learning processes. This empowers individuals to contribute effectively to the knowledge management cycle.

Knowledge Dissemination: Information is disseminated through various channels, such as reports, publications, webinars, and community meetings. The aim is to reach a wide audience, including other projects, policymakers, researchers, and the general public.

Adaptation of Strategies: Lessons learned contribute to adaptive management. Insights gained from successes and challenges inform adjustments to strategies, enhancing project effectiveness and sustainability.

Replication and Scaling: Successful practices and innovative solutions identified through lessons learned are scaled up to benefit a larger audience. This fosters the broader application of effective strategies in similar contexts.

Feedback Loop: The knowledge management process incorporates a feedback loop that encourages continuous improvement. Stakeholders are encouraged to provide input, reflecting on the effectiveness of shared lessons.

Overall, the learning and knowledge management component serves as a dynamic and cyclical process that facilitates the dissemination of insights, encourages ongoing learning, and ensures that the project's impact extends beyond its immediate scope, contributing to the advancement of climate-smart agriculture and sustainable land management practices.

H. Describe the consultative process, including the list of stakeholders consulted, undertaken during project preparation, with particular reference to vulnerable groups, including gender considerations, in compliance with the

Environmental and Social Policy and Gender Policy of the Adaptation Fund.

During the Project's appraisal phase, extensive consultations have already been conducted with key stakeholder groups, including pertinent national entities, representatives of regional and municipal administrations, civil society organizations (CSOs), academia, and representatives from vulnerable communities[23]. These preliminary discussions have proven pivotal in comprehending the Project's significance and have furnished invaluable insights that have contributed to shaping the initial roster of sectors and sub-sectors expounded in the proposal. It's noteworthy that these preliminary consultations will be succeeded by thorough and all-encompassing dialogues during the full proposal design phase, aimed at further refining and validating the Project's approach.

The engagement of these diverse stakeholder groups has played a decisive role in ensuring that the Project effectively addresses the exigencies and priorities of sectors and sub-sectors pinpointed as crucial for intervention and elaborated throughout the document. National entities and regional authorities have shared their expertise, providing context-specific insights into climate vulnerabilities and the requisites for adaptation. Representatives of municipal administrations have furnished invaluable perspectives on the localized repercussions of climate change and the unique challenges faced by communities.

CSOs have occupied a central role in advocating for the inclusion of vulnerable communities and marginalized groups in the decision-making process. Their contributions have been instrumental in identifying targeted interventions to augment the resilience of these communities. Academia's involvement has injected research-driven knowledge and technical proficiency, enriching the project's blueprint with innovative solutions and exemplar practices.

The consultative process has also underscored the significance of gender considerations, ensuring that the viewpoints and needs of women and other vulnerable groups are accorded due attention. Via these consultations, the Project preparation team has garnered a deeper insight into the disparate impacts of climate change across different genders and demographics.

Collectively, the inclusive and participatory nature of these consultations has underscored the Project's importance and its potential to effectively counteract the adverse impacts of climate change. The initial compilation of sectors and sub-sectors pinpointed during these discussions forms a foundational framework, serving as a robust starting point that furnishes a comprehensive groundwork for the ensuing rigorous consultations during the full proposal design phase. This iterative approach ensures that the Project is meticulously tailored to the specific requisites and priorities of the communities it aims to benefit, thereby maximizing its positive influence on climate resilience and adaptation.

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

[23] Provided in the Annex I. to this Proposal

The funding request for this project is well-justified, with a strong emphasis on the full cost of adaptation. The total budgetary requirement for this project amounts to 3,780,513USD, encompassing both project management and project execution fees. The funding request has been formulated based on available estimates of the expenses associated with the proposed climate-smart agricultural technologies, technology transfer, and capacity-building endeavors across four communities.

The comprehensive funding is vital to enable the successful implementation of a multifaceted strategy aimed at enhancing the resilience and adaptive capacity of communities within the "Khosrov Forest" State Reserve and "Dilijan" National Park adjacent areas. Several key justifications underline the necessity of the requested funding:

- **Holistic Approach to Adaptation:** The funding request encompasses a wide range of sectors critical for climate change adaptation, including degraded ecosystems, infrastructure, agriculture, water resources, energy efficiency, and supplementary income generation. This holistic approach addresses various dimensions of vulnerability, ensuring a comprehensive and effective response to the multifaceted challenges posed by climate change.
- **Technological and Knowledge Transfer:** The requested funds are essential to facilitate the transfer of climate-smart agricultural technologies and knowledge to local communities. These technologies, such as solar dryers, non-heated greenhouses, and drip irrigation systems, require initial investments for installation and training. However, they yield long-term benefits by increasing agricultural productivity, reducing losses, and enhancing water use efficiency.
- **Enhanced Adaptive Capacity:** The funding supports capacity-building initiatives for communities, producers, institutions, and stakeholders. This is crucial to bolster their understanding of climate change impacts and adaptation strategies. Strengthening adaptive capacities empowers these stakeholders to make informed decisions and implement effective measures in the face of changing climatic conditions.
- **Reducing Climate Risks:** The project's interventions aim to reduce the negative impacts of climate change, such as increased vulnerability to extreme weather events, water scarcity, and decreased agricultural yields. By investing in climate-resilient infrastructure, sustainable land management practices, and diversified income sources, the project mitigates these risks and fosters long-term sustainability.
- **Maximizing Long-Term Benefits:** While the initial costs of adaptation measures might seem significant, they lead to substantial long-term benefits. For instance, investments in energy-efficient technologies reduce ongoing operational costs, enhance resource efficiency, and contribute to carbon emissions reduction, resulting in economic and environmental gains over time.
- **Community Empowerment:** Adequate funding ensures active community involvement in decision-making processes and project implementation. Empowered communities are more likely to take ownership of adaptation strategies, ensuring their long-term effectiveness and sustainability.
- **Gender-Inclusive Approach:** The funding supports a gender-responsive approach, ensuring that the perspectives and needs of women and other vulnerable groups are

integrated into adaptation strategies. This inclusivity not only fosters social equity but also improves the effectiveness of interventions.

In conclusion, the requested funding aligns with the full cost of adaptation, encompassing a broad spectrum of sectors, technological transfer, capacity building, and community empowerment. By addressing the complexities of climate change impacts comprehensively, the funding contributes to building a resilient future for the targeted communities, safeguarding livelihoods, enhancing environmental sustainability, and promoting long-term well-being.

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

The sustainability of project outcomes has been a paramount consideration throughout the project's design, ensuring that the interventions deliver lasting benefits to the communities and ecosystems targeted within the "Khosrov Forest" State Reserve and "Dilijan" National Park adjacent areas. Several key strategies have been incorporated to ensure the sustainability of project outcomes:

- **Community Engagement and Ownership:** The project places a strong emphasis on participatory approaches, involving local communities, women, men, and vulnerable groups in decision-making processes. By actively engaging communities from the outset, the project fosters a sense of ownership, ensuring that beneficiaries are invested in the success of the interventions.
- **Capacity Building and Knowledge Transfer:** The project's capacity-building initiatives empower communities, producers, institutions, and stakeholders with the knowledge and skills needed to understand and address climate change impacts. This knowledge transfer not only enhances their adaptive capacities but also equips them to sustainably manage resources beyond the project's duration.
- **Technology Transfer and Local Solutions:** The adoption of climate-smart agricultural technologies, such as solar dryers, greenhouses, and drip irrigation systems, not only improves productivity but also strengthens local self-reliance. By training locals to operate and maintain these technologies, the project ensures that they continue to derive benefits even after project completion.
- **Gender Equity and Social Inclusion:** The project takes into account the different needs and roles of women and men, acknowledging their contributions and vulnerabilities. This gender-responsive approach not only enhances the effectiveness of interventions but also promotes social equity and inclusivity, contributing to long-term sustainability.
- **Economic Viability:** The project seeks to diversify income sources and enhance livelihoods through interventions like sustainable land management. By increasing income opportunities for communities, the project reduces dependence on external interventions and establishes economic resilience.
- **Institutional Strengthening:** Collaboration with national agencies, regional authorities, and civil society organizations helps strengthen institutional frameworks for climate change adaptation. These partnerships contribute to the sustainability of

project outcomes by integrating climate resilience into policy and planning processes.

- **Monitoring and Adaptive Management:** Robust monitoring and evaluation mechanisms are integral to the project's design. Regular assessment of progress and impacts allows for adjustments and improvements based on real-time feedback, ensuring that interventions remain effective and responsive to changing circumstances.
- **Replication and Scaling:** The project is designed to be scalable and replicable in other vulnerable areas. Lessons learned, best practices, and successful strategies will be documented and shared, enabling the broader dissemination of effective approaches.

In conclusion, the sustainability of project outcomes has been meticulously integrated into the project's design through community involvement, capacity building, technology transfer, gender equity, economic viability, institutional strengthening, monitoring, and replication strategies. These measures collectively ensure that the positive impacts of the interventions endure well beyond the project's conclusion, fostering resilience and adaptive capacity for the long term.

Ensuring the long-term sustainability of project outputs is a core element of the strategy, with a commitment to empowering municipalities and civil society organizations (CSOs) to take the lead once the project has concluded. As the project nears its completion, comprehensive training and knowledge transfer sessions will be facilitated for the municipalities and CSOs involved. These sessions will equip them with the necessary skills and expertise to effectively maintain and manage the project outputs independently, ensuring their continued functionality.

Ownership and stewardship of the project outputs are key to their enduring impact. To this end, a sense of ownership and responsibility will be fostered among municipalities and CSOs throughout the project's lifespan. They will actively participate in the decision-making processes, design post-project maintenance plans, and establish local committees to oversee the ongoing management of the outputs. Through their integral role in project implementation, a genuine commitment to the sustainability of these valuable resources will be cultivated. Together, municipalities and CSOs will champion the project's legacy, ensuring that the benefits of enhanced agricultural productivity and improved water supply systems continue to enrich the lives of local communities long after direct involvement has concluded. Maintenance of the rehabilitated field tracks will be carried out by municipalities.

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

Checklist of environmental and social principles	No further assessment required for compliance	Potential impacts and risks – further assessment and management required for compliance
Compliance with the Law	All activities of the proposed Project are in line with RA laws and regulatory acts.	Further assessment is required during Project kick-off stage, based on details of each Project component (design solutions, procurement, use of materials and etc.).
Access and Equity		Further assessment is required as the project may not be sufficiently accessible to all groups.
Marginalized and Vulnerable Groups		These groups will be identified through detailed mapping during the project implementation (conduct a census, establish indicators and etc.).
Human Rights	Human rights in natural resources use, equity, education, health, and other relevant sectors are protected by the Constitution of the Republic of Armenia and other relevant laws. The Project's activities does not have negative impact on the human rights of the inhabitants of beneficiary communities.	
Gender Equality and Women's Empowerment	In light of the findings from the Gender Assessment[24] that has been conducted/	Design of comprehensive Gender Action will be required at the Project's inception stage.

[24] Annex I

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Deleted: Project activities does not have negative impacts on vulnerable and marginalized groups.

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Deleted: the approach to managing women's participation in the project will be strategically designed and initiated from the project's inception. The initial phase will involve a meticulous profiling of all stakeholders, a process aimed at guaranteeing that women are not just participants but direct beneficiaries of the project's various elements.

Deleted: The project implementation phase will actively encourage and facilitate the involvement of women in various capacities, including leadership and decision-making roles. This proactive inclusion strategy is informed by our commitment to fostering an environment where women are empowered to take up positions that are traditionally underrepresented by females.¶
Recognizing the existence and potential of women and youth groups within the community, the project has incorporated plans to engage these groups actively. As a tangible step towards women's empowerment and economic independence, we will allocate solar dryers and greenhouses to women-led groups. This allocation is not just a tool for economic empowerment but is also envisioned as a means to bolster their roles as pivotal players in climate change adaptation initiatives.¶
The project's design inherently views women as direct beneficiaries, and this perspective will be maintained and emphasized during the selection of activities. The project team is committed to ensuring that all planned activities are responsive to the unique needs and challenges faced by women and girls in the community, thereby promoting gender equity and inclusion actively.¶
Training and awareness-raising activities will be crucial components of our gender equity promotion strategy. We aim to ensure significant representation of women and youth in these activities, targeting participation levels of up to 40%. This target is not arbitrary but is informed by the gender assessment findings and our commitment to promoting gender balance and equity in all project activities.¶
Lastly, the roles, contributions, and needs of women have been carefully considered and integrated into the project design phase. Women will not only be active participants but also leaders in climate change adaptation initiatives. Their involvement and leadership will be actively monitored and evaluated from the project's outset, ensuring their contributions are recognized, valued, and leveraged for the success of the project and the broader goal of community empowerment and climate resilience.¶

		The approach to managing women's participation in the project will be strategically designed and initiated from the project's inception. The initial phase will involve a meticulous profiling of all stakeholders, a process aimed at guaranteeing that women are not just participants but direct beneficiaries of the project's various elements. The project implementation phase will actively encourage and facilitate the involvement of women in various capacities, including leadership and decision-making roles. This proactive inclusion strategy is informed by our commitment to fostering an environment where women are empowered to take up positions that are traditionally underrepresented by females. Recognizing the existence and potential of women and youth groups within the community, the project has incorporated plans to engage these groups

		actively. As a tangible step towards women's empowerment and economic independence, we will allocate solar dryers and greenhouses to women-led groups. This allocation is not just a tool for economic empowerment but is also envisioned as a means to bolster their roles as pivotal players in climate change adaptation initiatives. The project's design inherently views women as direct beneficiaries, and this perspective will be maintained and emphasized during the selection of activities. The project team is committed to ensuring that all planned activities are responsive to the unique needs and challenges faced by women and girls in the community, thereby promoting gender equity and inclusion actively. Training and awareness-raising activities will be crucial components of our gender equity promotion strategy. We aim to ensure significant representation of women and youth in

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Core Labour Rights	The protection of Core Labour Rights in Armenia is guaranteed by RA national legislation, including international conventions ratified by the country.	
Indigenous Peoples	Armenia's population is homogeneous (around 96%), so there is no issue of potential violation of the rights	

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	of indigenous people.	
Involuntary Resettlement	Project implementation does not include any resettlement of residents. No further assessment is required for involuntary resettlement.	
Protection of Natural Habitats		Further assessment is required to ensure that the interventions will cause no harm to natural habitats, considering the proximity of the project sites to protected areas.
Conservation of Biological Diversity		Given the proximity of the project sites to protected areas, there is an inherent risk to natural habitats and biodiversity. Acknowledging this, it is imperative that a comprehensive Environmental and Social Management Plan (ESMP) be developed during the project kick-off stage to identify, mitigate, and manage potential adverse effects meticulously. The project is designed with a strong commitment to enhancing farmers' capacities in effective pest management, paying careful attention to the judicious selection and application of pesticides and fertilizers. This initiative aims not merely at controlling

		pests but fundamentally at ensuring the biodiversity inherent to pastures and grasslands remains unaltered and thriving. The emphasis is on preserving the delicate balance of the local ecosystems while enhancing farmers' ability to protect their crops sustainably. Understanding the critical importance of biodiversity and ecosystem services to both the environment and communities, the project unequivocally commits to not only maintaining but actively enhancing these elements. This commitment will manifest in the promotion and integration of sustainable management practices within the climate-smart agricultural strategies advocated by the project. Adopting a climate-smart agriculture approach is pivotal. This approach is not solely about preservation but actively enhances biodiversity, contributing significantly to natural

		regulation methods, including the installation of grass buffer strips, both invaluable in protecting and enhancing biodiversity. Capacity building is at the core of this project, with a structured program designed to facilitate knowledge transfer and peer-to-peer learning among farmers. This mechanism is expected to play a crucial role in promoting responsible and efficient management of natural resources, including land, water, soils, pastures, and forests. The objective is to empower farmers with the knowledge and skills necessary for sustainable resource management, ensuring their preservation and resilience for future generations. Furthermore, the project incorporates safeguards to prevent the introduction of invasive species, new pests, and diseases into the project sites. This preventive approach is crucial for protecting local biodiversity and

		natural habitats from potential threats that could disrupt their balance and health. Every action and initiative under this project will be meticulously planned and executed to ensure full compliance with relevant national and international laws and guidelines pertaining to environmental protection and biodiversity conservation, as outlined in the ESMP developed during the project kick-off stage.
Climate Change	The project does not have a negative impact on climate change. It will not generate significant and / or unjustified increase in greenhouse gas emissions or any other cause of climate change. Moreover, the creation of forested park will contribute to CO2 absorption and milder microclimate. No project interventions are expected to contribute to release of gases responsible for CC and thus are not expected to contribute to GHG emissions.	
Pollution Prevention and Resource Efficiency		Thus Project is not expected to generate significant environmental pollution and aims for higher resource efficiency for better management of available natural resources, agricultural

Deleted: Project is not expected to generate any environmental pollution and aims for higher resource efficiency for better management of available natural resources. Industrial wastes are stone residues that originate from quarrying. During the exploitation of quarries, the environment has been polluted by dust particles. The residents of the areas adjacent to floodplains crossing the town dump garbage into the floodplain, due to insufficient number of bins causing clogging during heavy rains and snowfall and causing floods thus creating anti-sanitary conditions that can cause infectious diseases during hot summers.

		value chains will certainly produce waste and may lead to other forms of pollution. Meantime different project components may have minor pollutions that shall be considered during project kick-off stage. For each Project component assessment of the pollution shall be conducted prior commencement of the activities.
Public Health	The stability of ecosystem balance will contribute to the improvement of public health. Thus, no adverse impact on public health related issues is envisaged.	
Physical and Cultural Heritage	During site assessments, heads of communities were consulted to make sure any cultural sites and sites with unique natural values are identified. As a result of this, EPIU has determined that there are no physical and cultural heritage sites in interventions envisaged by the program: closed quarry, gorges, natural, and agricultural landscapes. The activities envisaged by the Project are not implemented in such sites where there are physical and cultural heritage monuments	
Lands and Soil Conservation		In light of the outlined risks associated with land and soil degradation, further assessment and management measures are indeed

		necessary for compliance and successful project implementation. Activities integral to soil conservation and land management projects, while well-intentioned, inadvertently pose risks to soil health and structure. For instance, planting and irrigation, if not meticulously planned and executed, can lead to soil compaction, erosion, and alteration in soil composition, which are detrimental to the land's productivity and the local ecosystem. The introduction of non-native species or improper irrigation practices can disrupt the ecological balance, leading to unintended soil degradation. The use of heavy machinery, often necessary for these projects, can result in soil compaction, hindering its ability to support plant life and retain water, thereby increasing the risk of erosion, particularly in steep terrains. Furthermore, there is a risk of unintentional depletion of soil organic matter, which is crucial for soil fertility and water retention. This not only affects the

		productivity of the soil but also its capacity to act as a carbon sink, having broader implications on the ecosystem and climate. Given these risks, it is imperative to conduct further assessments to understand the local soil characteristics and ecosystem dynamics thoroughly (as a part of ESMP). This understanding will inform the development of tailored management practices that not only mitigate the risks of soil degradation but also enhance soil health. Continuous monitoring and adaptive management strategies are also crucial to promptly identifying and addressing signs of degradation, ensuring the project's activities contribute positively to land and soil health in the project area, thereby ensuring compliance with environmental standards and project objectives.

After undergoing initial screening, the proposed project concept is anticipated to align with Category B of the Adaptation Fund's Environmental and Social Policy (ESP), as its implementation is not expected to yield significant adverse environmental or social impacts. The Republic of Armenia, having been a member of the International Labour Organization (ILO) since 1992, has ratified all eight ILO Fundamental Conventions. This commitment ensures the application of ILO Core Labour Standards, including vital aspects such as freedom of association, collective bargaining, elimination of forced labor, eradication of child labor, and non-discrimination in employment.

Armenian national legislation is fortified by laws and regulations that enforce ILO Core

Labour standards. These regulations include the Law on Children's Rights (1996), Governmental Decision on identifying hazardous work for minors and women (2005), Law on Guaranteeing Equal Rights and Opportunities for Women and Men (2013), Law on Employment (2013), and the Labour Code (2004).

In compliance with Armenian labor laws, the general age for employment admission is 16, with hazardous work requiring a minimum age of 18. Adolescents aged 14 to 16 can engage in employment with written parental consent, provided the work doesn't jeopardize their well-being, safety, education, or ethics. The Labor Code specifically forbids individuals under 18 from night work and weekend or holiday labor. However, these regulations might not extend to informal, self-employed, or unpaid work settings.

A noteworthy observation is that cultural, traditional, or religious grounds within Armenia, particularly within the project area, do not give rise to differential benefits allocation between genders. Consequently, no further assessment is deemed necessary in this context. It is worth mentioning that assessments conducted previously have not revealed any significant gender-related concerns. While potential risks associated with women's involvement exist, necessary mitigation measures will be elucidated in part 3 of the project.

Armenia's status as a member of the Council of Europe underscores its commitment to gender equality and human rights. The project area, which includes predominantly ethnic Russian residents, has responded favorably to the project's objectives and activities. The project anticipates the renovation of existing roads and irrigation networks, measures that are projected to have a limited negative environmental impact.

The adoption of climate-smart agriculture, facilitated by innovative technologies and organic fertilizers, is poised to augment adaptability while simultaneously bolstering land conditions and minimizing environmental harm. Moreover, the utilization of lightweight construction techniques is expected to prevent soil damage and environmental pollution.

Deleted: A comprehensive and thorough risk identification, mitigation, and prevention strategy, including the formulation of an Environmental and Social Management Plan, will be detailed in the meticulously developed project proposal.

PART III: IMPLEMENTATION ARRANGEMENTS

A. Describe the arrangements for project/programme implementation.

The project is slated for a four-year implementation period commencing in September 2024. The designated implementing entity (IE) for this endeavor will be the Environmental Project Implementation Unit (EPIU), which serves as the National Implementing Entity for the Adaptation Fund. The Government of the Republic of Armenia has specifically endorsed EPIU's role in executing this project, drawing upon its extensive experience, successful track record, and established collaborations with national stakeholders, including public and private entities, academia, and NGOs.

The Project Management Board (PMB) will assume responsibility for making key decisions pertaining to the project. Its role extends to project assurance through monitoring and evaluation, performance enhancement, accountability, and learning. The PMB will approve multi-year and annual work plans, supervise their execution, and review reports. This board will comprise representatives from relevant ministries, local self-government bodies, and EPIU staff, with one member selected as the PMB secretary.

The Environmental Projects Implementation Unit (EPIU), serving as the National Implementing Entity (NIE), will undertake comprehensive management of the project. This encompasses facilitating interactions with the Adaptation Fund Board (AFB) and pertinent stakeholders, supervising portfolio implementation, overseeing budget reporting, ensuring the delivery of quality outputs and deliverables, managing fund disbursement, monitoring progress, integrating lessons learned into subsequent projects, and sustaining relationships with stakeholders.

Day-to-day project management will be diligently overseen by the EPIU's dedicated project management unit, working closely with the beneficiary communities. This specialized unit will be entrusted with a spectrum of responsibilities, crucially including the Monitoring and Evaluation (M&E) function. The M&E activities will be meticulously designed and implemented to align with the Adaptation Fund's stringent social and environmental standards.

Furthermore, the unit will oversee the procurement of goods and services, mobilize technical expertise, and implement risk mitigation strategies. The recruitment process will be initiated to onboard specialized experts, including but not limited to project coordinators, procurement specialists, accountants, social and gender specialists, environmental specialists, and monitoring and evaluation specialists. Engaging these experts will be pivotal for ensuring seamless coordination, efficient implementation, and robust monitoring of the project, with a keen focus on adhering to gender-responsive and environmentally sustainable principles and practices.

To guarantee equal gender benefits from the adaptation measures introduced, a **Gender Action Plan** (GAP) will be crafted for the project during the inception stage. The GAP will feature gender-responsive indicators, gender-sensitive planning, implementation,

and monitoring processes, and gender monitoring visits to project sites. The Social and Gender Specialist will lead GAP implementation, gender assessments, and awareness-raising workshops, as well as gender sensitivity training for project staff.

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

Risk	Probability	Impact	Mitigation Measures
Institutional Risks			
Not all essential stakeholders might possess the necessary capacity and dedication to actively engage throughout the entire process, spanning from inception to completion, and some could perceive exclusion. Subsequently, resistance may arise from certain stakeholders when it comes to embracing the proposed measures.	Medium	High	➢ The Project will capitalize on an active approach to stakeholder engagement, fostering regular consultations within the designated beneficiary communities: ➢ To ensure equitable participation across various segments such as women, youth, the elderly, and potentially vulnerable groups, focused consultations and collaborative working groups will be established. These avenues will provide ample opportunities for addressing the distinct requirements of these stakeholder categories. ➢ The process of selecting project beneficiaries will entail multiple stages: (1) identifying potential beneficiaries through community consultation meetings, (2) municipalities offering recommendations, and (3) final beneficiaries chosen via face-to-face meetings and farm visits. These visits will evaluate the beneficiary's farming

			skills and readiness to embrace the project's terms. ➢ To facilitate community members and stakeholders in raising concerns, a grievance redress mechanism will be implemented.
Project outcomes, including properties such as, greenhouses, dryers, etc. are not well protected	Low	Medium	➢ Binding legal agreements will be established with beneficiaries who receive project assets such as greenhouses and dryers. These agreements will outline the beneficiaries' responsibility to uphold the assets' functionality and cover any repair costs required to maintain their operational status. In instances of negligence, the contract will specify the obligation to return the asset to the project in proper working order for potential reassignment to other beneficiaries. ➢ Beneficiaries will also receive informative materials and leaflets detailing proper maintenance and operation of the provided assets. ➢ The assets distributed will be marked with the logos of the project and the Project Implementation Unit (PIU).

Delays in project implementation including those related to delayed procurement	Low	High	➢ During the Project inception stage, the project's implementation plan will be revised and updated. ➢ The advancement of project implementation within set timelines will be overseen through bi-weekly meetings conducted by the PIU team. ➢ Adherence to the Republic of Armenia's public procurement procedures is required by the PIU, where specific minimum timelines for various procurement stages are defined. To mitigate potential delays resulting from delayed procurement, the project timeframe includes maximum deadlines. ➢ Project activities have been meticulously prepared for completion within the proposed timeline. ➢ Monitoring initiatives will guarantee the realization of implementation objectives throughout the project's execution.
Implementation capacity constraints with limited human resources in national and regional authorities to ensure a timely implementation and the sustainability of the project.	Low	Low	➢ Knowledge and awareness building is one of the key components of the project. ➢ Project will equip all relevant authority workers, decision makers and local population will have

			sufficient knowledge on the landscape and ecosystem adaptation to climate change and efficient management of climate smart agricultural techniques.
Social Risks			
Project beneficiaries are resistant to change and/or the new technologies applied are difficult to manage	Medium	Medium	➢ During the implementation phase consultations of different stakeholders will ensure the ownership building for the project. ➢ Project will ensure active participation of stakeholders ➢ Awareness and knowledge raising activities will increase the capacity for managing the new technologies applied and will ensure that beneficiaries are not resistant towards adaptation activities.
Financial Risks			
Mismanagement of resources	Low	High	➢ Financial risk management will be possible by continuous evaluations, audits and reports as mentioned in M&E plan of the project.
Delays in the disbursement of funds.	Low	Low	➢ EPIU will ensure that all the funds are properly managed; all procurement activities are completed in a timely manner.

C. Measures for environmental and social risk management, in line with the Environmental and Social Policy and Gender Policy of the Adaptation Fund.

Risk	Probability	Impact	Mitigation Measures
Land and biodiversity degradation	*High*	*High*	➢ **Baseline Assessment:** Conduct a comprehensive baseline assessment to understand the current state of land and biodiversity in project areas. ➢ **Resource Mapping:** Implement resource mapping exercises to identify vulnerable ecosystems and species. ➢ **Conservation Plans:** Develop and implement conservation plans to protect and restore degraded lands and biodiversity. ➢ **Stakeholder Engagement:** Engage local communities and stakeholders in conservation efforts, fostering a sense of ownership and responsibility. ➢ **Adopting climate smart agriculture approach** ➢ **Development of site specific ESMPs for each component of the Project** ➢ **Installation of grass buffer strips** ➢ Prevention of the introduction of invasive species, new pests and diseases into the project sites. ➢ Application of pesticides and fertilizers by preserving the elocate balance of the local ecosystems ➢ **Capacity Building:** Provide training to local communities on sustainable land use practices and biodiversity conservation. ➢ **Monitoring:** Establish regular monitoring mechanisms to track changes in land and biodiversity health. ➢ **Contingency Plans:** Develop contingency plans to address

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			unexpected land and biodiversity degradation.
Weak infrastructure and limited climate technology adoption	*Medium*	*High*	➢ **Infrastructure Assessment:** Assess existing infrastructure and identify weaknesses. ➢ **Infrastructure Improvement:** Invest in infrastructure upgrades, particularly for irrigation systems and roads. ➢ **Climate Technology Training:** Provide training on climate-resilient agricultural practices and technologies. ➢ **Technology Adoption Support:** Facilitate the adoption of climate-resilient technologies through capacity building. ➢ **Awareness Campaigns:** Launch awareness campaigns to promote the benefits of climate-resilient technologies. ➢ **Monitoring and Evaluation:** Implement rigorous monitoring and evaluation of infrastructure and technology adoption. ➢ **Community Resilience Plans:** Work with communities to develop resilience plans for addressing infrastructure challenges.
Poverty and lack of alternative income sources	*High*	*High*	➢ **Livelihood Diversification:** Facilitate livelihood diversification programs to reduce dependency on natural resources. ➢ **Alternative Income Generation:** Develop initiatives for alternative income generation, such as training in non-agricultural skills. ➢ **Social Safety Nets:** Implement social safety nets to support vulnerable populations during transitions. ➢ **Gender-Inclusive Programs:** Design gender-inclusive programs to ensure equitable access to income-generating opportunities. ➢ **Impact Assessments:** Conduct regular impact assessments of

			poverty reduction and income generation initiatives. ➢ **Community Empowerment:** Empower communities to take charge of their economic development through participatory processes.
Gender inequality and disparities	*Medium*	*High*	➢ **Gender Analysis:** Conduct a thorough gender analysis to identify existing disparities and gender-specific vulnerabilities. ➢ **Gender-Responsive Planning:** Integrate gender-responsive approaches into project planning and design. ➢ **Gender Mainstreaming:** Ensure that project activities consider the unique needs and roles of both women and men. ➢ **Capacity Building:** Provide gender-sensitive training to project staff and stakeholders to enhance their understanding of gender issues. ➢ **Women's Empowerment:** Implement initiatives that empower women in decision-making, economic activities, and leadership roles. ➢ **Gender-Disaggregated Data:** Collect and analyze gender-disaggregated data to monitor the project's impact on women and men separately. ➢ **Gender Audits:** Conduct periodic gender audits to assess the effectiveness of gender mainstreaming efforts. ➢ **Stakeholder Inclusivity:** Ensure the inclusion of women and marginalized groups in project activities and decision-making processes.

Environmental and social management plan

The Project is classified as a "Category B" intervention, implying minimal environmental and societal effects. It is expected to positively influence land and soil conservation (in line with the positive impacts there can be also negative ones: soil degradation, and further assessment is required), climate change, and protected areas, benefiting both local communities and the

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project zone. To manage any arising social and environmental concerns, an Environmental and Social Management Plan (ESMP) will be developed. This plan, adhering to the Republic of Armenia's laws and the Adaptation Fund's policies, will detail strategies to minimize potential negative impacts to acceptable levels. It will also include a framework for ongoing monitoring of these risks and their mitigation, specifying assigned responsibilities. Stakeholder consultations and disclosure of relevant documents are integral to the ESMP and will precede any project-related actions or activities.

This environmental and social management plan shall be prepared to guide the future contractor during the preliminary design stage of each component/outcome of the Project. However, after the Contractor prepares/updates all the project technical documents: engineering-geological surveys, design-drawings, method statements, etc., the Contractor will be required to prepare site-specific Environmental and Social Management Plan(hereinafter SEMP) with more detailed site-specific and activity specific mitigation measures and prepare site specific environmental management plan prior to the implementation phase of each component.

Preparation/update of the SEMP shall be based on the following outline:

1. Boundaries of the site of each component are defined
2. Sensitive receptors and environmental values are identified
3. Site-specific activities are specified
4. The risk of impact is assessed
5. Environmental management measures are assigned for the impacts that need to be mitigated as a result of risk assessment
6. SEMP prepared including the sub plans indicated in section below.

This plan will serve as the basis for

1. Management of the project's potential impacts and their prevention of mitigation
2. Preparation of site-specific environmental and social management plans prior to commencement of Project activities
3. Implementation of the monitoring program to check the compliance with the plan indicators.

The plan shall provide general principles and common mitigation measures and include the following subplans:

- Occupational Health and Safety Plan
- Public Consultation and Communications Plan
- Flora & Fauna Protection Plan
- Physical and Cultural Resources Preservation Plan
- Environmental Protection Plan
- Site Management Plan
- Emergency Response Plan
- Waste and Material Disposal Plan
- Site Reinstatement, landscaping and Revegetation Plan

Outline of the plan can be changed taking into account specific parameters of each Project component.

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Summary of the outcomes of ES impact assessment

Following an extensive and meticulous impact assessment, the Project's alignment with critical environmental and social principles has been rigorously evaluated. These outcomes, reflective of a thorough examination, provide valuable insights into the Project's compliance and potential areas requiring further attention.

First and foremost, the Project demonstrates robust compliance with the prevailing laws and regulatory framework of the Republic of Armenia. All project activities have been found to be fully in line with these legal provisions, thus obviating the need for additional scrutiny in this regard.

However, a critical dimension that demands heightened attention is the aspect of gender inclusivity within the broader framework of access and equity. The comprehensive assessment has discerned the potential for unequal access to project benefits among different groups, with a particular concern for gender disparities. It is evident that women, despite their vital roles in communities, may face barriers to equitable participation and benefit realization. This glaring disparity underscores the importance for an in-depth assessment and the strategic development of measures that not only ensure fairness and inclusivity in project participation but also actively dismantle gender-related barriers. By prioritizing gender inclusivity, the project not only advances social justice but also harnesses the untapped potential of women, ultimately strengthening communities and bolstering the project's overall impact.

On a more positive note, the project's activities do not yield any adverse impacts on marginalized and vulnerable groups, suggesting a favorable outcome in terms of social inclusiveness and protection of these groups.

The assessment affirms that the project is respectful of fundamental human rights, which are enshrined and protected by the Constitution of the Republic of Armenia and other relevant laws. It provides assurance that the project activities do not encroach upon the human rights of the inhabitants in the beneficiary communities.

In alignment with the broader commitment to gender equality and women's empowerment, the project's comprehensive gender assessment underscores a resolute dedication to advancing these principles. From the very outset, the project adopts a strategic design that prioritizes gender inclusivity, exemplified by the meticulous profiling of stakeholders and a fervent commitment to ensuring that women not only participate but also directly benefit from every facet of the project. Moreover, a core focus of the project is the active engagement of women in leadership and decision-making roles, with the primary goal of dismantling traditional barriers and ensuring that women play pivotal roles in shaping the project's direction and outcomes. This proactive approach not only upholds the principles of gender equity but also acknowledges and leverages the valuable contributions of women for the project's success and the broader goal of community empowerment.

The assessment confirms that core labor rights in Armenia are effectively safeguarded through the nation's legal framework and international conventions ratified by the country, ensuring the protection of labor rights for all individuals involved.

The homogeneous nature of Armenia's population composition, approximately 96%, eliminates

any concerns related to potential violations of the rights of indigenous peoples within the project's scope.

Notably, the project does not entail the resettlement of residents, sparing it from any involuntary resettlement issues and negating the necessity for further assessment in this regard.

However, the protection of natural habitats emerges as an area necessitating additional scrutiny. The project's interventions may pose risks to these vital ecosystems, mandating a more in-depth assessment to ensure their preservation.

Likewise, the conservation of biological diversity is an issue of concern, primarily due to the project's proximity to protected areas. Given the potential impact on natural habitats and biodiversity, it is imperative to develop a comprehensive Environmental and Social Management Plan (ESMP) during the project's initiation phase. This plan will identify, mitigate, and meticulously manage potential adverse effects on the environment.

On the climate front, the project's assessment indicates a positive outcome. It affirms that the project will not exacerbate climate change and may even contribute positively by absorbing CO2 and promoting a milder microclimate.

Efforts to prevent environmental pollution and enhance resource efficiency within the project's framework have been favorably acknowledged. Specific issues related to pollution are being addressed to ensure compliance with environmental standards.

Public health is anticipated to benefit from the project's endeavors to maintain ecosystem balance, with no adverse health-related impacts foreseen.

Through community consultations and site assessments, it has been established that there are no physical and cultural heritage sites within the project's scope, alleviating concerns in this regard.

Lastly, land and soil conservation emerge as areas that warrant further evaluation and management. The assessment highlights risks associated with land and soil degradation, such as soil compaction, erosion, alteration in soil composition, and depletion of soil organic matter. These factors necessitate a more comprehensive understanding of local soil characteristics and ecosystem dynamics, as part of the ESMP. Tailored management practices are essential to mitigate these risks and enhance soil health while ensuring compliance with environmental standards and project objectives.

In conclusion, the outcomes of the comprehensive impact assessment provide valuable insights into the project's adherence to environmental and social principles. While certain areas demonstrate robust compliance, others require further assessment and management to guarantee the project's success and adherence to these principles throughout its lifecycle. These findings will inform critical decision-making processes and guide the project's path forward.

Environmental and Social Action Plan

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N	Activities and	Actions required	Timetable

	ES risks		
1	Line routing, site selection and access road	➢ Stakeholder engagement ➢ Notification of RA Ministry of Environment and/or all other relevant authorities and local governance bodies in accordance with RA legislation (if needed) ➢ Notification to project affected persons prior to land survey that plantations/trees could be affected ➢ Notification to project affected persons prior to land survey on compensation mechanisms (if any) ➢ Pay compensation for all damages caused during the land survey (if any)	During Project preparation/design stage
2	Soil erosion, soil use	➢ Minimize removing of topsoil ➢ Store of topsoil in line with international good practice and/or local legislation so that it can be used after implementation of rehabilitation works ➢ Bring back topsoil to its original place after having finished the erection of irrigation system ➢ Restoration of the damaged land with replanting of the vegetation (if any) ➢ Preparation and implementation of specific erosion control plans (when final technical design is available)	During Project implementation stage
3	Landscape and visual aspects	➢ Dismantling of workers camps and harmonization of the areas with the landscape ➢ Dismantling of old irrigation system/system remnants and other old facilities if no longer used	At the final stage of the Project each particular component
4	Noise	➢ Optimization of transportation management to avoid needless truck drives ➢ Allow truck movements only during daylight but not between 7pm and 6 am ➢ Reduce vehicle speeds in populated areas ➢ Regular maintenance and service of building machinery ➢ For workers noise levels shall be kept below 80dB (A) ➢ For residents the noise level shall not exceed 55dB (A)	During construction activities

		➢ Notify nearby residents and businesses at least 24 hours in advance if particularly noise activities are anticipated	
5	Air quality	➢ Limitations of size, weight loads of vehicles using particularly difficult roads ➢ Reduction of speed and limited movement of vehicles ➢ Optimize transportation management to avoid needless truck trips ➢ Maintain vehicles and construction machinery properly, as recommended by suppliers ➢ Cover truck beds with tarps during material transport ➢ Use dust suppressing water spray during civil works, where necessary ➢ Avoid unnecessary idling of construction machines and vehicles ➢ Prohibit open burning of waste material at site	During construction activities
6	Soil and water pollution	➢ Store all liquid materials (fuel, engine oil) and lubricants in locked tanks ➢ regular maintenance of all vehicles and machines at regular service stations, if possible ➢ provide proper sanitation facilities with hand washing facilities, with adequate number, separately for men and women, septic tank usage, which have to be emptied by a specialized company ➢ place plastic or other protective cloth under any areas where the materials will be painted ➢ Preparation of spill prevention plan, provision of spill control materials to drivers and workers in order to clean up spills ➢ Report and respond to spills promptly and train workers on how to report ➢ Remove contaminated soil if spills occur and handle as hazardous waste ➢ Control oil and fuel handling ➢ Repair and damage to riparian areas	During construction activities
7	Flora and fauna	➢ In case of forest trees are to be felled development and implementation of compensatory tree planting plan, following requirements of national law. ➢ Area at least twice bigger the area where the trees were felled, replanting of indigenous sire specific	Throughout the Project implementation

		tree species near to sites where trees were felled and their maintenance until their classification under the forest category ➢ Further assessment of flora and fauna shall be implemented, if needed, to assess the damaged species ➢ Revegetate all disturbed areas and rehabilitate access roads, workers camps, lay down and deposit areas with the site specific and adaptive plant species ➢ Compensation of felled trees on community/private lands, for damaged crops shall be mentioned in resettlement action plan, as per the best practice	
8	Waste	➢ Collect all type of wastes including domestic and sanitary wastes. The disposal areas of wastes shall be clarified with local authorities ➢ Development of waste management plan considering: ➢ waste management hierarchy of avoidance-minimization-reuse-treatment-disposal, ➢ segregation of wastes, ➢ minimization of construction waste by good technical planning ➢ Train workers in handling and disposal of recyclable, sanitary, solid, liquid and hazardous waste	Throughout the Project implementation
9	Employee health and safety	➢ Development of environmental, health and safety policy for the implementation phase including commitment to international requirements in advance of physical activities under the project ➢ Installation of workers grievance mechanism as part of the Health, Safety and Environment Management Plan, including grievance log-book and grievance follow up documentation. Provide the possibility to lodge complaints also anonymously ➢ Provide proper sanitation facilities separately for men and women ➢ Provide HIV/AIDS protection equipment for workers ➢ Accommodation of workers in adjacent towns has first priority	Throughout the Project implementation

		➢ Provide workers with appropriate protective equipment ➢ All work crews shall have at least one person trained in first aid ➢ Provide first aid kit and fire extinguishers at all project sites and in all vehicles ➢ If work crews are in remote areas they shall be equipped with cellular phones or radios ➢ Forbid alcohol or other drugs at sites ➢ Assure transfer of injured workers to hospitals in the case of serious accidents ➢ Identify area of emergency responders, hospitals, provide advance notice of project activities ➢ Record work hours, as well as accidents and incidents.	
10	Public Health and Safety	➢ Development and implementation of Community Health and Safety Management Plan including protecting the local communities from risks of exposure to disease from the workforce ➢ Development and implementation of Emergency Preparedness and Response Plan for implementation phase including training of workforce and communication with communities ➢ Notification of the public on upcoming construction activities in adjacent villages and through media in advance of implementation period ➢ Inform population along public roads in advance in case of transporting heavy equipment ➢ Provide adequate security measures to prevent accidents and injury (e.g. keeping the speed limit on public roads) ➢ Using warning signs at access points along main roads and around work sites near villages and residences ➢ Provide clear and adequate signage to identify work areas and hazardous equipment before commencement of implementation stage ➢ Provide adequate security to prevent public access to the work sites, hazardous materials and waste ➢ Fencing of construction sites, material storage areas, hazardous material storage areas and etc.	Throughout the Project implementation

		➢ Establish worker code of conduct to help prevent conflict with community	
11	Historical and cultural sites	➢ Preparation and implementation of Chance Find Procedure and training of the workers ➢ Report chance finds immediately to the Agency for the Protection of Monuments of History and Culture Protection of the RA Ministry of Education, Science, Culture and Sports ➢ Agree with the representatives of Agency for the Protection of Monuments of History and Culture Protection about the irrigation system location and access roads (including proposed bypasses) ➢ Shifting the route of the irrigation system (if needed) have to be approved by Agency for the Protection of Monuments of History and Culture Protection	During construction activities and site selection (if any)
12	Traffic	➢ Announce start and duration of works through media and signs to the public in advance of implementation stage ➢ Keep speed limits in public roads ➢ Licensing and training of drivers, improvement of driving skills ➢ Training and licensing industrial vehicle operators in the safe operation of specialized vehicles, including safe loading/unloading and load limits ➢ Maintain vehicles regularly and use manufacturer approved parts to minimize potentially serious accidents caused by equipment malfunction or premature failure ➢ Collaborate with local communities and authorities to improve signage, visibility and overall safety of roads ➢ Allow traffic to pass through the work in progress where possible ➢ Erect signs that the traffic is aware far from about the works under implementation ➢ Coordination with emergency responders ➢ Ensure all equipment is visible to the traffic through either illumination or suitable marking ➢ Ensure the work areas are lighted well ➢ Sign the actual construction sites area sufficiently at night	Throughout the Project implementation

13	Social impacts	➢ Develop and implement a non-discriminatory hiring and wage policy ➢ Prioritize employment of local people ➢ Improve recruitment of women for construction works ➢ Prepare and implement labour management plan ➢ Consultation with the project affected persons about their development priorities ➢ Zero tolerance for sexual harassment ➢ Strengthen district administrations on gender issues ➢ Implement and communicate an accessible grievance mechanism for project affected persons to address complaints	Before commencement of any activity

1. Risk management arrangements

i. **Responsibilities:** The ESMP's primary managerial control will reside with the EPIU project manager, who will also hold the ultimate accountability for compliance. Any modifications or supplementary tasks emerging during the project's execution that enhance or align with the proposed sub-projects, and are within the Adaptation Fund's permissible boundaries, must receive the project manager's endorsement. Following this, the project management board will grant approval, depending on the activity's scope and nature.

ii. The heads of the "Khosrov Forest" State Reserve and "Dilijan" National Park SNCOs will be integral members of the Governing Council, actively participating in both decision-making and implementation stages. Entities responsible for developing and crafting management plans will work in close collaboration with the SNCOs. This partnership will involve detailed discussions on project preliminary assessment documents and management strategies. Given that the Dilijan community is situated within the national park's boundaries, the SNCO will appoint qualified experts to conduct biodiversity impact assessments throughout the project's execution. Additionally, SNCO staff will play a role in addressing complaints and grievances, joining the panel dedicated to these issues.

iii. **Management and mitigation measures:** During the project preparation phase, all activities were evaluated for potential environmental and social risks, encompassing 15 distinct areas. These findings will be shared with all stakeholders at the project's inception meeting, ensuring a comprehensive understanding of the management and monitoring plans to be implemented.

2. General environmental and social risks management reduction measures

To augment the risk management approach, extra elements will be incorporated, emphasizing stringent adherence to the Environmental and Social Plan (ESP). These components, crafted to supplement the measures already identified, aim to establish a more thorough and inclusive framework. This framework is intended to address potential risks comprehensively and uphold

environmental and social obligations throughout the project's duration, thus underscoring a commitment to high standards in environmental and social governance.

i. Contracts and cooperation agreements with contracting entities will encompass explicit references to the Environmental and Social Management Plan (ESMP) and Guiding Principles (GP), particularly emphasizing adherence to the 15 principles of the Environmental and Social Plan (ESP). Special focus will be given to compliance with legal requirements (principle 1), adherence to human rights standards (principle 4), implementation of a gender-sensitive approach (principle 5), and maintenance of labor and safety standards (principles 6 and 13).

   - **Principle 1:** References to standards and laws to which the activity will need to comply will be included in all legal agreements with all sub-contractors, including steps and responsibilities for compliance.
   - **Principle 4:** References to relevant Humans rights declarations will be included in all legal agreements with all sub-contractors.
   - **Principe 6:** Employment and working conditions following ILO standards will be included in legal agreements with all subcontractors.

ii. In addition to the project manager, EPIU staff will be responsible for ensuring the project's adherence to the Adaptation Fund's Environmental and Social Policy (ESP), focusing particularly on principle 4.

iii. Ongoing collaboration with technical supervisors will be maintained to ensure compliance with national and local standards.

iv. Specialists in social, gender, and environmental fields will conduct gender assessments and evaluate the project's compliance and potential risks in line with the Adaptation Fund's ESP principle 5.

v. The Project Management Unit and the EPIU will strive to ensure equitable access to the project's benefits for all stakeholders. Monitoring and Evaluation (M&E) activities will be utilized to assess equity at all project stages, adopting a bottom-up, participatory approach that prioritizes the needs and preferences of the communities involved.

vi. Training and capacity building activities will be organized for management teams, executing entity partners, and target communities. These activities, planned for the inception stage, aim to enhance understanding and management of the 15 Principles and the ESMP, with a specific focus on their respective responsibilities.

3. Risk monitoring arrangements

i. Monitoring processes will be implemented to ensure that measures are executed promptly and to assess whether these actions are effectively mitigating risks or impacts, or if adjustments are necessary to achieve the desired outcomes.

Annual reports will detail the progress of the Environmental and Social Management Plan (ESMP) implementation, focusing on measures aimed at avoiding, minimizing, or mitigating environmental and social risks. These reports will also include, if required, details of any corrective actions that need to be undertaken. The responsibility for direct monitoring falls to the project manager and designated monitoring specialists. The overall project manager will maintain oversight and bear the ultimate responsibility for compliance. Additionally, monitoring indicators will be modified or supplemented as needed when changes or additional activities are deemed necessary.

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4. Grievance readdress mechanism

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The Grievance Redress Mechanism (GRM) will be governed by the policies and guidelines of the EPIU GM. According to these policies, the GRM is designed to contribute to the improvement of environmental and social welfare, including aspects of human rights and gender equality. It will be responsible for receiving and aiding in the resolution of issues, complaints, and grievances related to the program's performance in environmental, social, human rights, and gender aspects, as well as other general concerns linked to the program. This mechanism will be utilized as needed to address any grievances that may emerge during the program's implementation.

Affected individuals can submit their concerns, complaints, and grievances to the Project Implementation Unit (PIU). Within the PIU, the Project Coordinator, Environmental and Social Safeguard (ESS), and Gender Specialists will act as the primary contacts for receiving, documenting, evaluating, and resolving these issues in collaboration with relevant stakeholders, based on the nature of the complaint. A comprehensive complaints register will be maintained, logging the date, specifics, and type of each complaint, the identity of the complainant, and the follow-up actions taken subsequent to the investigation. Quarterly reports summarizing complaints received and immediate actions followed should be submitted to the Project Steering Committee that should ensure permanent control over the process.

The register will serve not only as a record of complaints but also as a comprehensive reference system. It will systematically cross-reference each complaint with any associated documents, including non-compliance reports, corrective action reports, or any other relevant documentation related to the issue. This methodical approach ensures that all aspects of a complaint are considered and addressed in a cohesive manner, facilitating a thorough and integrated process for resolving grievances and ensuring accountability in the project's management.

Level	Process	Periodicity
1.	Any individual or community leader, along with representatives or other interested parties who are affected, can bring their grievances directly to the Project Management Unit (PMU). This process allows for a structured approach to addressing concerns raised by those impacted by the project.	Anytime
2.	The Project Coordinator, Environmental and Social Safeguard (ESS), or Gender Specialist is responsible for reviewing the grievances. They will work towards finding a resolution to the issues raised,	Weekly

	doing so in consultation with community leaders. This collaborative approach ensures that solutions are well-informed and considerate of the community's perspectives and needs.	
3.	The Project Coordinator, Environmental and Social Safeguard (ESS) Specialist, or Gender Specialist is tasked with informing the affected individual who submitted the grievance about the outcome. This step ensures that the person who raised the concern is kept updated on the resolution process and its results.	Weekly
If the grievance remains unresolved, or the individual is dissatisfied with the outcome at the Project Management Unit (PMU) level, or if no response has been received within the designated time frame, further steps can be taken. This provision ensures that grievances are not left unaddressed and that there are additional avenues for resolution if initial efforts at the PMU level do not yield satisfactory results.		
4.	If the affected person's concerns are not adequately resolved at the Project Management Unit (PMU) level, they have the option to escalate their grievance. This can be done by presenting their issue to relevant local authorities such as Municipalities or community halls, or they may choose to approach higher authorities like the Ministry of Environment or the National Implementing Entity (NIE). This step provides an additional layer of oversight and ensures that grievances have multiple channels for consideration and resolution.	Within 2 weeks of receipt of decision at Level 3
5.	The National Implementing Entity (NIE) takes on the responsibility of reviewing the escalated grievance. In their review process, they aim to find a solution, which may encompass suggestions for dispute resolution. This could include identifying and recommending a suitable body to oversee and manage the resolution process, ensuring that the grievance is addressed in an appropriate and effective manner.	Bi-weekly

6.	Once the National Implementing Entity (NIE) has reviewed the grievance and identified a potential resolution, they are responsible for communicating the outcome back to the individual who initially lodged the complaint. This step ensures that the affected person is kept informed about the findings and the proposed solutions to their issue.	Weekly
If the grievance remains unresolved, or at any point during the process, if the concerned party is not satisfied with the handling or outcome of their complaint, they have the option to pursue further actions. This provision ensures that individuals have continuous access to avenues for addressing their concerns until a satisfactory resolution is reached.		
In such cases where the issue remains unresolved or if the concerned party is dissatisfied with the response at any stage, they have the right to escalate the matter further. The affected party can approach the Office of the Ombudsperson, or they may choose to take their grievance to an appropriate court or law enforcement bodies. This step offers an additional layer of oversight and ensures that there are formal and legal avenues available for the resolution of their concerns.		Based on the decision of the Office of the Ombudsperson, the judicial system, or law enforcement bodies, further actions will be taken regarding the grievance.

These measures align with the Environmental and Social Policy and Gender Policy of the Adaptation Fund and aim to address environmental, social, and gender-related risks associated with the Project. Regular monitoring and adaptation of these measures will be essential to effectively manage and mitigate risks throughout the project's lifecycle.

D. Describe the monitoring and evaluation arrangements and provide a budgeted M&E plan, in compliance with the ESP and the Gender Policy of the Adaptation Fund.

The Project's monitoring and evaluation (M&E) arrangements encompass a comprehensive approach to oversee project progress and assess its outcomes. The M&E activities will be managed within the allocated M&E budget, as detailed below. Monitoring and evaluation will be a collaborative effort involving the Project Team, with verification by the National Implementing Entity (NIE). The progress will be evaluated based on predefined targets and indicators established in the Project Results Framework.

The Project Management Unit (PMU) will establish a robust system for monitoring the project's progress. This system will facilitate data collection and recording through participatory mechanisms, enabling the monitoring and evaluation of both outcome and

output indicators. Key tasks during the Project Launch workshop will include introducing the project's results framework to all stakeholders, presenting the project team, fostering ownership, and planning the work plan in alignment with the project's results framework. This will involve defining roles, responsibilities, and functions of both the NIE and the Project Management team. Additionally, the M&E indicators, budget, and work plan will be collaboratively agreed upon and scheduled.

Throughout the project duration, the PMU and the dedicated monitoring and evaluation division will shoulder the responsibility for ongoing monitoring. Their actions will be guided by the Annual Operating Plan (AOP), which outlines all essential activities for the current year. Quarterly Status Reports (QSRs) will provide insights into the progress of executed activities. AOPs will be annually agreed upon during NIE meetings and will be guided by the project's results framework.

A significant feature of our M&E framework will be the incorporation of sex-disaggregated data in our data collection, analysis, and reporting processes. This approach ensures that the project's impacts on different gender groups are accurately captured and understood, providing a basis for gender-responsive project implementation and adjustment. Even though the specific arrangements for M&E, including the mechanisms for collecting and analyzing sex-disaggregated data, will be further refined during the project inception phase, the commitment to gender-sensitive M&E is unequivocal and will be a guiding principle throughout the project lifecycle.

To bolster the effectiveness of the project's M&E function, the unit will actively utilize gender-responsive indicators, facilitating a nuanced understanding of the project's gender-differentiated impacts and contributing to the development of interventions that are sensitive to the needs and priorities of all gender groups.

Monitoring and Evaluation (M&E) processes have been designed with a gender-sensitive lens, with a focus on women groups. This targeted approach in M&E aims to meticulously assess the direct and indirect benefits accruing to women as a result of the project, providing valuable insights into the project’s impact on promoting gender equity and women empowerment.

Several reports and evaluations will be developed over the project's lifecycle, including:

- **Inception Workshop Report:** This report, prepared after the inception workshop, will detail the roles, responsibilities, actions, and functions of all stakeholders. It will also encompass the first AOP and monitoring plan for the initial year.
- **Annual Operating Plan (AOP):** AOPs, to be approved by the NIE before each operating period, will outline all planned activities, milestones, and goals for the year. It will include the necessary financial activities relevant to the period.
- **Quarterly Status Reports (QSRs):** These reports, to be submitted by the project management unit at the end of each operating quarter, will track the execution of indicators as defined in the project results framework. They will also address challenges faced and constraints encountered during execution.
- **Annual Management Reports (AMR):** The AMR, covering the last AOP, will compare actual results against the targets and milestones outlined in the AOP. If necessary, it will propose improvements and corrective measures for the upcoming AOP.

- **External Audit Reports:** These reports, aligned with government Financial Regulations, will be prepared in conjunction with periodic financial statements.
- **Mid-term Evaluation:** Conducted halfway through project implementation, this external evaluation will assess progress towards achieving outcomes, taking into account project effectiveness and efficiency. It will suggest corrective actions if needed.
- **Final Report:** This report, presented three months before project completion, will primarily focus on assessing project results against planned outcomes. It will also evaluate project impacts and sustainability.
- **Final External Evaluation:** This evaluation will emphasize project impacts, sustainability, and long-term effects. It will provide recommendations for further actions to ensure project sustainability. These M&E arrangements will incorporate a gender-responsive stakeholder consultation process. If specific gender targets or gender-responsive outcomes are identified, a dedicated specialist will monitor these aspects closely.

M&E Budget breakdown:

Item	**Responsible**	**Project Lifespan**				**Total**
		1st year	**2nd year**	**3d year**	**4th year**	
Quarterly and annual Reports	*EPIU PMU*	-	-	-	-	**-**
Final Report	*EPIU PMU*	-	-	-	-	**-**
Project Management Board Meetings	*Project manager*	1,000$	1,000$	1,000$	1,000$	**4,000$**
Technical & copyright supervision	*Local expert/s*	10,000$	10,000$	10,000$	10,000$	**40,000$**
Inception and Final Workshops	*EPIU PMU*	2,000$	-	-	2,000$	**4,000$**
Mid-term evaluation	*International Expert*	-	-	20,000$	-	**20,000$**
Final Evaluation	*International Expert*	-	-	-	20,000$	**20,000$**
External Audit	*National audit company*	3,000$	3,000$	3,000$	3,000$	**12,000$**
TOTAL:		16,000$	14,000$	34,000$	36,000$	**100,000$**

E. Results framework for the project proposal, including milestones, targets and indicators

Result	Indicator	Baseline[25]	Milestone[26] *(end of year 2)*	End of Project target[27]	Means of verification	Responsibility
Objective: to scale up and replicate successful practices achieved during pilot project to reduce the climate risk vulnerability of local communities living adjacent to the "Khosrov Forest" and "Dilijan" National Parks through promoting sustainable and climate-resilient agricultural practices in degraded areas and buffer zones, thereby reducing climate-related risks and vulnerabilities in production systems while sustaining protected areas.	➢ **N** of Project beneficiaries *(direct & indirect)*; ➢ **%** of women beneficiaries; ➢ **N** of communities benefited; ➢ **N** of settlements benefited; ➢ **%** of vulnerable settlements benefited;	**16,000** direct beneficiaries out of which **40%** are women **2** communities **10** settlements **1%**	**26,000** direct beneficiaries **40%** **4** communities **6** settlements **2%**	**36,000** direct beneficiaries **40%** 6 communities 10 settlements **3%**	➢ 6 monthly project reports; ➢ Annual PPRs; ➢ Surveys; ➢ M&E interim and final reports; ➢ Impact assessment report (upon completion);	EPIU, targeted municipalities and settlements;
Component 1: Community based, climate smart agricultural practices in degraded areas and buffer zone						
Outcome 1: Community based, climate smart agricultural practices are	➢ **N of ha** of land rehabilitated and with increased adaptation	➢ **N** of ha of land degraded in target communities;	➢ **N** of ha of land (**%**) rehabilitated; ➢ Water losses in irrigation system	➢ **N** of ha of land (**%**) rehabilitated; ➢ Water losses in irrigation system	➢ 6 monthly project reports; ➢ Annual PPRs; ➢ Surveys;	EPIU, targeted municipalities and settlements;

[25] Achieved in the result of implementation of the pilot Project "Strengthening land based adaptation capacity in communities adjacent to protected areas in Armenia"
[26] Include also beneficiaries indicated in the baseline
[27] Include also beneficiaries indicated in the baseline

implemented in degraded areas to reduce climate risks vulnerability of production systems and sustain protected areas;	capacity; ➢ Water loss in irrigation systems reduced; ➢ **%** of livestock benefitting adapted pasture management	➢ Water losses in irrigation system reduced to **70%**; ➢ **10%** of livestock benefitting adapted pasture management	reduced to **50%** benefiting **30%** of livestock;	reduced to **30%** benefiting **50%** of livestock;	➢ M&E interim and final reports; ➢ Impact assessment report (upon completion);	
Output 1.1 Irrigation water supply systems in 6 new municipalities are rehabilitated increasing water use efficiency;	➢ **Length** of irrigation system rehabilitated; ➢ **N** of solar-powered pumps installed;	➢ **6,200 m** of rehabilitated irrigation system; ➢ **4** installed solar-powered pumps;	➢ **7,200 m** of rehabilitated irrigation system; ➢ **3** installed solar-powered pumps;	➢ **12,000 m** of rehabilitated irrigation system; ➢ 6 installed solar-powered pumps;	➢ 6 monthly project reports; ➢ Annual PPRs; ➢ Surveys; ➢ M&E interim and final reports; ➢ Impact assessment report (upon completion);	EPIU, targeted municipalities and settlements;
Output 1.2 Orchards with drip irrigation system and anti-hail nets established;	➢ **N** of ha of orchards equipped with drip irrigation and anti-hail nets; ➢ **N** of communities benefited;	➢ **5.2** ha of orchards equipped with drip irrigation and anti-hail nets; ➢ **6** communities benefited;	➢ **4.0** ha of orchards equipped with drip irrigation and anti-hail nets; ➢ 3 communities benefited;	➢ **12.0** ha of orchards equipped with drip irrigation and anti-hail nets; ➢ 6 communities benefited;	➢ 6 monthly project reports; ➢ Annual PPRs; ➢ Surveys; ➢ M&E interim and final reports; ➢ Impact assessment report (upon completion);	EPIU, targeted municipalities and settlements;
Output 1.3 Existing field tracks to remote pastures degraded lands are rehabilitated;	➢ **%** of field tracks degraded / rehabilitated; ➢ **N of** km field tracks rehabilitated; ➢ **N** of culverts installed;	➢ **30%** of field tracks rehabilitated; ➢ **39.5** km rehabilitated; ➢ **50** culverts installed;	➢ **40%** of field tracks rehabilitated; ➢ **8.0** km rehabilitated; ➢ 15 culverts installed;	➢ **45%** of field tracks rehabilitated; ➢ **20.0** km rehabilitated; ➢ **25** culverts installed;	➢ 6 monthly project reports; ➢ Annual PPRs; ➢ Surveys; ➢ M&E interim and final reports; ➢ Impact assessment report (upon	EPIU, targeted municipalities and settlements;

					completion);	
Output 1.4 Sowing areas of perennial plants are created reducing rangeland degradation *(30 ha of perennial sowing area established)*;	➢ **N** of ha of perennial sowing areas of perennial plants are created;	➢ **10** ha of perennial sowing areas of perennial plants are created;	➢ **25** ha of perennial sowing areas of perennial plants are created;	➢ **30** ha of perennial sowing areas of perennial plants are created;	➢ 6 monthly project reports; ➢ Annual PPRs; ➢ Surveys; ➢ M&E interim and final reports; ➢ Impact assessment report (upon completion);	EPIU, targeted municipalities and settlements;
Output 1.5 Community pastures and hay meadows are rehabilitated and improved their adaptive capacity;	➢ **N** of ha hay meadows, arable lands and pastures rehabilitated;	➢ **1,382** ha hay meadows, arable lands and pastures rehabilitated;	➢ **300** ha hay meadows, arable lands and pastures rehabilitated;	➢ **500** ha hay meadows, arable lands and pastures rehabilitated;	➢ 6 monthly project reports; ➢ Annual PPRs; ➢ Surveys; ➢ M&E interim and final reports; ➢ Impact assessment report (upon completion);	EPIU, targeted municipalities and settlements;
Output 1.6 Livestock watering points are constructed;	➢ **N** of watering points constructed	➢ **15** of watering points constructed	➢ 3 of watering points constructed	➢ 5 of watering points constructed	➢ 6 monthly project reports; ➢ Annual PPRs; ➢ Surveys; ➢ M&E interim and final reports; ➢ Impact assessment report (upon completion);	EPIU, targeted municipalities and settlements;
Output 1.7 Architectural and design drawings and estimates;	➢ **N** of architectural and design drawings and estimates;	-	➢ 3 architectural and design drawings and estimates;	➢ 6 architectural and design drawings and estimates;	➢ 6 monthly project reports; ➢ Annual PPRs; ➢ Surveys; ➢ M&E interim and final reports; ➢ Impact	EPIU, targeted municipalities and settlements;

					assessment report (upon completion);	
Output 1.8 Capacity building for improved grazing management in targeted municipalities	➢ **N** of training programs and thematic topics for awareness raising at community level on improving grazing management practices are designed; ➢ **N** of community members benefited from the trainings; ➢ **%** of women beneficiaries;	**0**	➢ **4** training programs and thematic topics for awareness raising at community level on grazing management designed; ➢ **200** community members benefited from the trainings, of which **50%** are women;	➢ **6** of training programs and thematic topics for awareness raising at community level on grazing management practicies are designed; ➢ **400** community members benefited from the trainings, of which **50%** are women;	➢ 6 monthly project reports; ➢ Annual PPRs; ➢ Surveys of training participants; ➢ M&E interim and final reports; ➢ Impact assessment report (upon completion);	EPIU, targeted municipalities and settlements;
Component 2: Strengthening value chains and climate smart technology transfer for vulnerable communities						
Outcome 2: Value chains for climate smart agriculture are strengthened and climate smart technologies are accessible for vulnerable rural communities	➢ **N** of beneficiaries benefitting from climate smart technologies; ➢ Increased income, or avoided decrease in income; ➢ **%** of women beneficiaries benefitting from climate smart technologies	➢ **350** beneficiaries; ➢ **50%** of beneficiaries of climate smart technology are women;	➢ **500** beneficiaries; ➢ **50%** of beneficiaries of climate smart technology are women;	➢ **700** beneficiaries; ➢ **50%** of beneficiaries of climate smart technology are women;	➢ 6 monthly project reports; ➢ Annual PPRs; ➢ Surveys; ➢ M&E interim and final reports; ➢ Impact assessment report (upon completion);	EPIU, targeted municipalities and settlements;
Output 2.1 Smart agricultural practices in 6 municipalities are introduced, establishing berry	➢ **N** of ha of berry orchards with drip irrigation system are constructed;	-	➢ **1** of ha of berry orchards with drip irrigation system are constructed;	➢ **3** of ha of berry orchards with drip irrigation system are constructed;	➢ 6 monthly project reports; ➢ Annual PPRs; ➢ Surveys; ➢ M&E interim and	EPIU, targeted municipalities and settlements;

orchards with drip irrigation system					final reports; ➢ Impact assessment report (upon completion);	
Output 2.2 Non-heated, lightweight greenhouses are constructed in priority community areas;	➢ **Surface** (m^2) of greenhouses constructed; ➢ **N** of beneficiaries with access to greenhouses; ➢ **%** of beneficiaries with access to green houses, which are women;	➢ **3,000** m^2 of greenhouses constructed; ➢ **100** beneficiaries with access to greenhouses; ➢ **70%** of beneficiaries with access to green houses, which are women;	➢ **1,500** m^2 of greenhouses constructed; ➢ **20** beneficiaries with access to greenhouses; ➢ **30%** of beneficiaries with access to green houses, which are women;	➢ **3,000** m^2 of greenhouses constructed; ➢ **40** beneficiaries with access to greenhouses; ➢ **40%** of beneficiaries with access to green houses, which are women;	➢ 6 monthly project reports; ➢ Annual PPRs; ➢ Surveys; ➢ M&E interim and final reports; ➢ Impact assessment report (upon completion);	EPIU, targeted municipalities and settlements;
Output 2.3 Solar dryers are installed in priority community areas;	➢ **N** of beneficiaries with access to solar driers; ➢ **%** of beneficiaries with access to solar driers, which are women;	➢ **100** beneficiaries with access to solar driers; ➢ **80%** of beneficiaries with access to solar driers, which are women;	➢ **120** beneficiaries with access to solar driers; ➢ **80%** of beneficiaries with access to solar driers, which are women;	➢ **140** beneficiaries with access to solar driers; ➢ **80%** of beneficiaries with access to solar driers, which are women;	➢ 6 monthly project reports; ➢ Annual PPRs; ➢ Surveys; ➢ M&E interim and final reports; ➢ Impact assessment report (upon completion);	EPIU, targeted municipalities and settlements;
Output 2.4 Community management and business plans are formulated for climate smart agricultural value chains;	➢ **N** of community management and business plans are formulated for climate smart agricultural value chains;	➢ **2** community management and business plans are formulated for climate smart agricultural value chains;	➢ **5** community management and business plans are formulated for climate smart agricultural value chains;	➢ 5 community management and business plans are formulated for climate smart agricultural value chains;	➢ 6 monthly project reports; ➢ Annual PPRs; ➢ Business plans; ➢ M&E interim and final reports;	EPIU, targeted municipalities and settlements;
Output 2.5 Agrivoltaic systems are piloted;	➢ **N** of installations;	-	➢ **5** installations *(with 30 KW of installed capacity each);*	➢ **10** installations *(with 30 KW of installed capacity each);*	➢ 6 monthly project reports; ➢ Annual PPRs; ➢ Surveys;	EPIU, targeted municipalities and settlements;

					➢ M&E interim and final reports; ➢ Impact assessment report (upon completion);	
Output 2.6 Demonstration sites for sustainable land management practices are constructed in each municipality;	➢ **N** of municipalities with installed demonstration sites on sustainable land management practices;	-	➢ **3** municipalities with installed demonstration sites on sustainable land management practices;	➢ **10** municipalities with installed demonstration sites on sustainable land management practices;	➢ 6 monthly project reports; ➢ Annual PPRs; ➢ M&E interim and final reports; ➢ Impact assessment report (upon completion);	EPIU, targeted municipalities and settlements;
Output 2.7 2 agro-acceleration hubs are piloted to enhance integration with existing supply chains;	➢ **N** of agro-acceleration hubs piloted; ➢ **N** of beneficiaries benefited; ➢ **%** of women benefited;	-	➢ **1** agro-acceleration hubs piloted; ➢ **30** of beneficiaries benefited, **50%** of which are women;	➢ **2** agro-acceleration hubs piloted; ➢ **60** of beneficiaries benefited, **50%** of which are women;	➢ 6 monthly project reports; ➢ Annual PPRs; ➢ Surveys of beneficiaries; ➢ M&E interim and final reports; ➢ Impact assessment report (upon completion);	EPIU, targeted municipalities and settlements;
Output 2.8 Model agrotourism facilities are piloted in every community;	➢ **N** of model agrotourism facilities piloted in every community; ➢ **N** of visitors;	-	➢ **6** model agrotourism facilities piloted in 3 communities; ➢ **500** of visitors;	➢ **12** of model agrotourism facilities piloted in 6 communities; ➢ **1,000** of visitors;	➢ 6 monthly project reports; ➢ Annual PPRs; ➢ Surveys of visitors; ➢ M&E interim and final reports; ➢ Impact assessment report (upon completion);	EPIU, targeted municipalities and settlements;
Output 2.9 New varieties of dry	➢ **N** of new varieties of dry	-	➢ 3 new varieties of dry and heat	➢ 6 new varieties of dry and heat	➢ 6 monthly project reports;	EPIU, targeted municipalities and

and heat resistant crops are piloted	and heat resistant crops are piloted; ➢ **N** of beneficiaries piloted new crops;		resistant crops are piloted; ➢ **50** beneficiaries piloted new crops;	resistant crops are piloted; ➢ **100** beneficiaries piloted new crops;	➢ Annual PPRs; ➢ Surveys of beneficiaries; ➢ M&E interim and final reports; ➢ Impact assessment report (upon completion);	settlements;
Component 3: Awareness raising, capacity building, monitoring and decision making for climate smart agricultural practices						
Outcome 3: Awareness, planning, monitoring and decision-making capacity on climate smart agriculture production methods and LDN has increased in target communities	➢ **N** of beneficiaries benefitting from awareness raising and capacity building for climate smart agriculture and LDN; ➢ **%** of beneficiaries benefitting from awareness raising and capacity building for climate smart agriculture and LDN are women;	➢ **300** beneficiaries benefited from awareness raising and capacity building for climate smart agriculture and LDN; ➢ **40%** of beneficiaries benefited from awareness raising and capacity building for climate smart agriculture and LDN are women;	➢ **450** beneficiaries benefited from awareness raising and capacity building for climate smart agriculture and LDN; ➢ **40%** of beneficiaries benefited from awareness raising and capacity building for climate smart agriculture and LDN are women;	➢ **600** of beneficiaries benefitting from awareness raising and capacity building for climate smart agriculture and LDN; ➢ **40%** of beneficiaries benefited from awareness raising and capacity building for climate smart agriculture and LDN are women;	➢ 6 monthly project reports; ➢ Annual PPRs; ➢ Surveys of beneficiaries; ➢ M&E interim and final reports; ➢ Impact assessment report (upon completion);	EPIU, targeted municipalities and settlements;
Output 3.1 Farmer field schools and extension services have been provided to share best practices of climate smart agriculture and LDN for the targeted communities;	➢ **N** of beneficiaries that are aware of climate change impacts and appropriate responses to threats; ➢ **%** of women beneficiaries that are aware of climate change	➢ **200** of beneficiaries that are aware of climate change impacts and appropriate responses to threats; ➢ **40%** of women beneficiaries that are aware of climate change	➢ **300** of beneficiaries that are aware of climate change impacts and appropriate responses to threats; ➢ **40%** of women beneficiaries that are aware of climate change	➢ **400** of beneficiaries that are aware of climate change impacts and appropriate responses to threats; ➢ **40%** of women beneficiaries that are aware of climate change	➢ 6 monthly project reports; ➢ Annual PPRs; ➢ Surveys of beneficiaries; ➢ M&E interim and final reports; ➢ Impact assessment report (upon completion);	EPIU, targeted municipalities and settlements;

	impacts and appropriate responses to threats;	impacts and appropriate responses to threats;	impacts and appropriate responses to threats;	impacts and appropriate responses to threats;		
Output 3.2 Best practices examples and training material on natural and agricultural ecosystems' adaptation under the conditions of climate change are formulated, disseminated and made accessible;	➢ **N** of training programs and thematic topics for awareness raising at community level on climate change threats designed; ➢ **N** of community members benefited from the trainings; ➢ **%** of women beneficiaries;	➢ **4** training materials are produced;	➢ **6** training programs and thematic topics for awareness raising at community level on climate change threats designed; ➢ **200** community members benefited from the trainings, of which **50%** are women;	➢ **8** of training programs and thematic topics for awareness raising at community level on climate change threats designed; ➢ **400** community members benefited from the trainings, of which **50%** are women;	➢ 6 monthly project reports; ➢ Annual PPRs; ➢ Surveys of training participants; ➢ M&E interim and final reports; ➢ Impact assessment report (upon completion);	EPIU, targeted municipalities and settlements;
Output 3.3 Community based adaptation planning is conducted for target communities;	➢ **N** of community-based adaptation plans formulated;	➢ **4** community-based adaptation plans formulated;	➢ 3 community-based adaptation plans formulated;	➢ 6 community-based adaptation plans formulated;	➢ 6 monthly project reports; ➢ Annual PPRs; ➢ Community-based adaptation plans; ➢ M&E interim and final reports; ➢ Impact assessment report (upon completion);	EPIU, targeted municipalities and settlements;
Output 3.4 Strategies for sustaining climate smart agriculture and LDN in target areas have been formulated;	➢ **N** of strategies for sustaining climate smart agriculture and LDN in target areas formulated;	➢ **3** strategies for sustaining climate smart agriculture and LDN in target areas formulated;	➢ **5** strategies for sustaining climate smart agriculture and LDN in target areas formulated;	➢ 6 strategies for sustaining climate smart agriculture and LDN in target areas formulated;	➢ 6 monthly project reports; ➢ Annual PPRs; ➢ Strategies for sustaining climate smart agriculture and LDN;	EPIU, targeted municipalities and settlements;

					➢ M&E interim and final reports; ➢ Impact assessment report (upon completion);	
Output 3.5 Capacities of local stakeholders, including municipalities, CSOs and managers of protected areas (women, youth, environmental) are advanced;	➢ **N** of municipalities benefited from capacity building; ➢ **N** of women, youth and environmental CSOs benefited from capacity building;	-	➢ **3** municipalities benefited from capacity building; ➢ **5** women, youth and environmental CSOs benefited from capacity building;	➢ **6** municipalities benefited from capacity building; ➢ **10** women, youth and environmental CSOs benefited from capacity building;	➢ 6 monthly project reports; ➢ Annual PPRs; ➢ Municipalities' and CSO's mapping, capacity assessment and completion reports; ➢ M&E interim and final reports; ➢ Impact assessment report (upon completion);	EPIU, targeted municipalities and settlements;

F. Project's alignment with the Results Framework of the Adaptation Fund

Project Objective(s)	Project Objective Indicator(s)	Fund Outcome	Fund Outcome Indicator	Grant Amount (USD)
The **overall objective** of the project is reducing the climate risk vulnerability of local communities living adjacent to the "Khosrov Forest", "Dilijan" and "Lake Sevan" National Parks through promoting sustainable and climate-resilient agricultural practices in degraded areas and buffer zones, thereby reducing climate-related risks and vulnerabilities in production systems while sustaining protected areas.	1. Threat level to ecosystems, related to climate change effects	Outcome 5: Increased ecosystem resilience in response to climate change and variability-induced stress	5. Ecosystem services and natural assets maintained or improved under climate change and variability-induced stress	-
Project Outcome(s)	**Project Outcome Indicator(s)**	**Fund Output**	**Fund Output Indicator**	**Grant Amount (USD)**
Outcome 1: Community based, climate smart agricultural practices are implemented in degraded areas to reduce climate risks vulnerability of production systems and sustain protected areas.	Climate smart technologies are accessible for vulnerable rural communities;	Output 5: Vulnerable physical, natural, and social assets strengthened in response to climate change impacts, including variability	5.1. No. and type of natural resource assets created, maintained or improved to withstand conditions resulting from climate variability and change	**1,948,500**
Outcome 2: Value chains for climate smart agriculture are strengthened and climate smart technologies are accessible for vulnerable rural communities	Productivity of agricultural products has increased.	Output 6: Targeted individual and community livelihood strategies strengthened in relation to climate	6.1.1.No. and type of adaptation assets (physical as well as knowledge) created in support of individual or community-	**1,324,352**

		change impacts, including variability	livelihood strategies 6.1.2. Type of income sources for households generated under climate change scenario	
Outcome 3: Awareness, planning, monitoring and decision-making capacity on climate smart agriculture production methods and LDN has increased in target communities.	The number of community workers, households, NGO representatives, managers of protected areas mass media representatives, schoolteachers and students participated in awareness and knowledge raising trainings.	Output 3: Targeted population groups participating in adaptation and risk reduction awareness activities	3.1.1 No. and type of risk reduction actions or strategies introduced at local level 3.1.2 No. of news outlets in the local press and media that have covered the topic	**160.000**

G. Detailed budget with budget notes, a budget on the Implementing Entity management fee use, and an explanation and a breakdown of the execution costs.

Output	Item	Budget Notes	Budget during Project lifespan (in USD)				Total Budget (in USD)	Comments
			Year 1	Year 2	Year 3	Year 4		
Component 1: Community based, climate smart agricultural practices in degraded areas and buffer zone								
Output 1.1 Irrigation water supply systems in 6 new municipalities are rehabilitated increasing water use efficiency *(12,000 m and 6 solar-powered pumps)*;	Construction Company N 1	Construction of the irrigation system	300,000	310,000	-	-	**610,000**	-
		Installation of 38 KW/hour solar pumps	30,000	40,000	-	-	**70,000**	-
		Establishment of parks without drip irrigation system	-	28,000	40,000	-	**68,000**	-
Output 1.2 Orchards with drip irrigation system and anti-hail nets will be established in 6 communities (12 ha);	Construction Company N 1	Construction of drip irrigation system	-	200,000	200,000	85,000	**485,000**	-
Output 1.3 Existing field tracks to remote pastures degraded lands are rehabilitated (15% of field tracks rehabilitated	Construction Company N 2	Reconstruction of existing field tracks and Installation of water culverts	-	100,000	65,000	-	**165,000**	-

20 km rehabilitated 25 culverts installed);								
Output 1.4 Sowing areas of perennial plants are created reducing rangeland degradation *(30 ha of perennial sowing area established)*; **Output 1.5** Community pastures and hay meadows are rehabilitated and improved their adaptive capacity *(500 ha hay meadows, pastures and arable lands rehabilitated)*;	Implementing Company N 1	Rehabilitation of arable lands and	10,000	10,000	10,000	-	**30,000**	-
		Rehabilitation of community pastures and hay meadows	60,000	140,000	80,000	-	**280,000**	-
	Construction Company N 1	Establishment of parks with drip irrigation system	12,000	12,000	12,000	-	**36,000**	-
Output 1.6 Livestock watering points are constructed *(5 watering points constructed)*;	Construction Company N1	Construction of livestock watering points	30,000	39,500			**69,500**	-
Output 1.7 Architectural and design drawings and	Architectural Design Company N 1	Preparation of Design-Estimated Document	95,000	-	-	-	**95,000**	-

estimates;								
Output 1.8 Capacity building for improved grazing management in targeted municipalities	Consulting company N 1	Design and delivery of capacity enhancement activities for beneficiary municipalities	20,000	20,000	-	-	**40,000**	
Subtotal for Component 1			**537,000**	**879,500**	**407,000**	**85,000**	**1,908,500**	-
Component 2: Strengthening value chains and climate smart technology transfer for vulnerable communities								
Output 2.1 Smart agricultural practices in 6 municipalities are introduced, *establishing 3 ha berry orchards with drip irrigation system*	Implementing Company N 1	Smart agricultural practices, 3 ha of berry orchards with drip irrigation system	-	-	75,000	-	**75,000**	-
Output 2.2 Non-heated, lightweight greenhouses are constructed in priority community areas *(3000m2 of greenhouses constructed 40 beneficiaries)*	Construction Company N 2	Construction of solar greenhouses with drip irrigation	-	100,000	75,000	-	**175,000**	-
Output 2.3 Solar dryers are installed in priority community areas *(40 solar dryers*	Construction Company N 3	Construction of the solar driers	-	-	60,000	64,352	**124,352**	-

constructed 40 beneficiaries)								
Output 2.4 Community management and business plans are formulated for climate smart agricultural value chains *(5 business plans formulated)*	Consulting Company N 1	Community management and business plans, including for climate smart agricultural value chains and increasing adaption of natural and agricultural ecosystems	-	65,000	-	-	**65,000**	-
Output 2.5 Agrivoltaic systems are piloted *(10 installations with 30 KW of installed capacity each)*	ESCO Company	Construction of the AgriVoltaic installations	-	200,000	205,000	-	**405,000**	-
Output 2.6 Demonstration sites for sustainable land management practices are constructed in each municipality;	Agricultural construction company	Construction of the demonstration sites	-	35,000	-	-	**35,000**	-
Output 2.7 2 agro-acceleration hubs are piloted to enhance integration with	Construction Company N 3	Renovation of the premises for agro-accelerator[28]	50,000	50,000	-	-	**100,000**	-
	Implementing Company N 2	Supply of the furniture for agro-	10,000	10,000	-	-	**20,000**	-

[28] The beneficiaries/owners of these premises are municipalities, who will provide them free of charge for the activities of the Project

existing supply chains;		accelerators						
	Implementing Company N 3	Supply of office equipment for agro-accelerators	20,000	20,000	-	-	**40,000**	-
	Professional expert services	Experts for agro-accelerators	-	30,000	30,000	30,000	**90,000**	-
Output 2.8 2 model agrotourism facilities are piloted in every community	Sub-grants to beneficiaries	Piloting model agro-tourism facilities in targeted municipalities	30,000	40,000	40,000	40,000	**150,000**	-
Output 2.9 New varieties of dry and heat resistant crops are piloted	Sub-grants to beneficiaries	Piloting New varieties of dry and heat resistant crops in targeted municipalities	-	15,000	15,000	15,000	**45,000**	-
Subtotal for Component 2.			**110,000**	**565,000**	**500,000**	**149,352**	**1.324.352**	-
Component 3: Awareness raising, capacity building, monitoring and decision making for climate smart agricultural practices								
Output 3.1 Farmer field schools and extension services have been provided to share best practices of climate smart agriculture and LDN for the targeted communities *(200 beneficiaries)*	Consulting Company N 2	Workshops	-	-	-	5,000	**5,000**	-
		Development of questionnaires and conducting surveys	-	-	-	10,000	**10,000**	-
		Development of field schools training programs	-	-	-	10,000	**10,000**	-
		Organization of field school groups, knowledge	-	-	-	15,000	**15,000**	-

		enhancement, demonstration field experiments						
Output 3.2 Best practices examples and training material on natural and agricultural ecosystems' adaptation under the conditions of climate change are formulated, disseminated and made accessible *(4 training programs and thematic topics)*;	Consulting Company N 3	Mapping and SWOT analysis of communities	-	-	15,000	-	**15,000**	-
		Develop a training and awareness-raising program,	-	-	5,000	-	**5,000**	-
		Develop topics for the project	-	-	5,000	-	**5,000**	-
		Implement knowledge and skills training program	-	-	15,000	-	**15,000**	-
Output 3.3 Community based adaptation planning is conducted for target communities *(4 community-based adaptation plans formulated)*	Consulting Company N 4	Design of the community adaptation plans	-	-	15,000	-	**15,000**	-

Output 3.4 Strategies for sustaining climate smart agriculture and LDN in target areas have been formulated *(4 community-based strategies adaptation plans formulated)*	Consulting Company N 5	Develop strategies for sustaining climate smart agriculture and LDN in target areas	-	-	-	15,000	**15,000**	-
Output 3.5 Capacities of local stakeholders, including municipalities, CSOs and managers of protected areas *(women, youth, environmental)* are advanced;	Consulting Company N 6	Determine the existing non-governmental organizations, women, youth, environmental and other unions in the communities, develop and capacity building plan for them.	-	-	25,000	25,000	**50,000**	-
Subtotal for Component 3			**-**	**-**	**80,000**	**80,000**	**160,000**	
TOTAL for Project's Components			**667,000**	**1,464,500**	**987,000**	**314,352**	3,432,852	
Project Execution costs (EPIU)1.5% of total budget)			13,000$	13,000$	13,000$	12,492$	51,492	
TOTAL Project Costs			680,000	1,477,000	1,000,000	326,844	**3,484,344**	
IE Fee / Oversight Costs (*max 8.5% of total budget)			65,169 $	63,000$	83,000$	85,000$	**296,169**	
GRAND TOTAL			745,169	1,540,000	1,083,000	411,844	**3,780,513**	

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IE Fee / Oversight Costs *(*max 8.5% of total budget)*

Item	Responsible	Project Lifespan				Total
		1st year	2nd year	3d year	4th year	
I. Project Management						
Project Manager	*EPIU PMU*	15,750$	15,750$	15,750$	15,750$	**63,000$**
Project Coordinator	*EPIU PMU*	12,750$	12,750$	12,750$	12,750$	**51,000$**
Monitoring Specialist	*EPIU PMU*	7,250$	7,250$	7,250$	7,250$	**29,000$**
Social and Gender risk assessment specialist	*EPIU PMU*	7,250$	7,250$	7,250$	7,250$	**29,000$**
Environmental risk specialist	*EPIU PMU*	6,000$	6,000$	6,000$	6,000$	**24,000$**
Subtotal for Project Management		49,000$	49,000$	49,000$	49,000$	**196,000$**
II. Monitoring & Evaluation						
Quarterly and annual Reports	*EPIU PMU*	-	-	-	-	**-**
Final Report	*EPIU PMU*	-	-	-	-	**-**
Project Management Board Meetings	*Project manager*	1,169$	1,000$	1,000$	1,000$	**4,169$**
Technical & copyright supervision	*Local expert/s*	10,000$	10,000$	10,000$	10,000$	**40,000$**
Inception and Final Workshops	*EPIU PMU*	2,000$	-	-	2,000$	**4,000$**
Mid-term evaluation	*International Expert*	-	-	20,000$	-	**20,000$**
Final Evaluation	*International Expert*	-	-	-	20,000$	**20,000$**
External Audit	*National audit company*	3,000$	3,000$	3,000$	3,000$	**12,000$**
Subtotal for Monitoring & Evaluation		16,000$	14,000$	34,000$	36,000$	**100,000$**

TOTAL	**65,169 $**	**63,000$**	**83,000$**	**85,000$**	**296,169$**

Project Execution costs (EPIU)1.5% of total budget

Item	**Project Lifespan**				**Total**
	1st year	**2nd year**	**3d year**	**4th year**	
Finance Officer	5,000$	5,000$	5,000$	5,000$	**20,000$**
Administrative Support	3,000$	3,000$	3,000$	3,000$	**12,000$**
Procurement Specialist	2,500$	2,500$	2,500$	2,500$	**10,000$**
Field trips	1,500$	1,500$	1,500$	1,500$	**6,000$**
Misc	1,000$	1,000$	1,000$	492$	**3,492$**
TOTAL:	**13,000$**	**13,000$**	**13,000$**	**12,492$**	**51,492$**

Disbursement schedule with the time bound milestones

	Year 1	**Year 2**	**Year 3**	**Year 4**	**Total**
Scheduled Date	January 2024	January 2025	January 2026	January 2027	
Project Funds	**667,000**	**1,464,500**	**987,000**	**314,352**	**3,432,852**
Project Execution costs	13,000$	13,000$	13,000$	12,492$	**51,492**
Total Project Cost	680,000	1,477,000	1,000,000	326,844	**3,484,344**
IE Fee / Oversight Costs	65,169	63,000	83,000	85,000	**296,169**
Total Project/ Programme Cost	745,169	1,540,000	1,083,000	411,844	**3,780,513**

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

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

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

Hakob Simidyan *Minister of Environment of the Republic of Armenia*	Date*: 18.08.2023*

B. Implementing Entity certification

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

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

I certify that this proposal has been prepared in accordance with guidelines provided by the Adaptation Fund Board, and prevailing National Development and Adaptation Plans (……list here…..) and subject to the approval by the Adaptation Fund Board, commit to implementing the project/programme in compliance with the Environmental and Social Policy and the Gender Policy of the Adaptation Fund and on the understanding that the Implementing Entity will be fully (legally and financially) responsible for the implementation of this project/programme.

Name & Signature Implementing Entity Coordinator Armen Yesoyan, Director, ''Environmental Project Implementation Unit'' State Agency Under the Ministry of Environment of the Republic of Armenia	
Date: *21.08.2023*	Tel. and email: info@cep.am, +37410651631
Project Contact Person: Rubik Shahazizyan, Head of Project Implementation and Monitoring Department, ''EPIU''SA Milena Kiramijyan, Acting Specialist of Cooperation with Donors Department, ''EPIU'' SA	
Tel. And Email: rshahazizyan@yahoo.com, +37410651631 milena.kiramijyan@gmail.com/milena.kiramijyan@epiu.am, +37410651631	

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REPUBLIC OF ARMENIA
MINISTER OF ENVIRONMENT
РЕСПУБЛИКА АРМЕНИЯ
МИНИСТР ОКРУЖАЮЩЕЙ СРЕДЫ

№ 1/27.1/1523

«16» «02» 2024

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

Subject: Request to approve "Environmental Project Implementation Unit" State Agency as Implementing and Executing Entity for the grant project "Enhancing the land-based adaptation of communities adjacent to arid zones and forest protected areas of Armenia by duplicating and expanding the successful mechanisms of the previous projects"

Reference is made to the Decision B.18/30 of the Adaptation Fund Board, which decided that execution services will only be provided by Implementing Entities on an exceptional basis and at the written request by the recipient country, involving designated authorities in the process, and providing rationale for such a request.

In my capacity as designated authority for the Adaptation Fund in the Republic of Armenia, I confirm that "Environmental Project Implementation Unit" State Agency of the Ministry of Environment of the Republic of Armenia (hereinafter Agency) will serve as both Implementing and Executing Entity for the grant project "Enhancing the land-based adaptation of communities adjacent to arid zones and forest protected areas of Armenia by duplicating and expanding the successful mechanisms of the previous projects", since:

- As indicated in the Charter of the Agency, the Ministry of Environment has mandated the Agency to implement environmental projects and programmes;
- The Agency has proven experience of implementing environmental projects in accordance with the respective requirements, policies and procedures of the Adaptation Fund;

- There is no enough qualified executing entity in the targeted regions that can implement proposed activities in the manner concordant with the Adaptation Fund's policies and procedures.

Accordingly, I would like to request the Adaptation Fund to approve the Agency's candidacy as Implementing and Executing Entity for the above-mentioned project.

Sincerely,

Hakob Simidyan

"Environmental Project Implementation Unit" State Agency
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ANNEX I.

Excerpt from the Stakeholder Consultations Report

I. Background

The “Environmental Project Implementation Unit” State Agency of the Ministry of Nature Protection of the Republic of Armenia (EPIU) has contracted Consultant to support in development of full proposals for Scaling up adaptation capacity in communities adjacent to arid zones and forest protected areas of Armenia and replicating successful mechanisms tested during pilot project;

One of the key components of the Consultant’s work is mapping of the environmental and climate change challenges existing in the most vulnerable communities of Armenia, as well as identification and development of potential interventions by the EPIU aimed at prevention or mitigation of the adverse impact on environment and increasing the climate change adaption capacities of the communities.

On July 24,2023 the Consultant’s team had a meeting with the management and respective experts of the EPIU. During the meeting the lists of the potential target communities of the upcoming project were discussed and agreed on (see the list of the potential target communities in the table below).

N	Region	Community	Stakeholder(s)
1.	Shirak	Ani consolidated community	Head and municipality officials
2.		Artik consolidated community	Head and municipality officials
3.		Ashotsk consolidated community	Head of the community and heads of all settlements administration
4.	Lori	Lermontovo community	Head and municipality officials
5.		Fioletovo consolidated community	Deputy head and municipality officials
6.	Tavush	Dilijan consolidated community	Head of the community and heads of all the settlements administration
7.	Gegharkunik	Sevan consolidated community	Municipality officials and heads of the Semyonovka and Tsovagyugh

			settlements administration
8.		"Sevan" National park	Officials of park
9.	Aragatsotn	Aragatsotn region	Deputy governor, head and other officials of the Agriculture and Environment protection Department of the Aragatsotn regional government
10.	Ararat	Vedi, Ararat and Artashat consolidated communities	Head and other officials of the Agriculture and Environment protection Department of the Ararat regional government, Municipality officials of the Vedi, Ararat and Artashat consolidated communities
11.	Armavir	Armavir region	Head and other officials of the Agriculture and Environment protection Department of the Armavir regional government
12.		Khoy consolidated community	Head and municipality officials

Stakeholder consultations have been conducted in the format of Focus Group Discussions (please see the photos in the Annex). For this purpose the Consultant's team has developed a questionnaire that would allow to reveal the environmental and climate change challenges existing in the communities, identify the impact of those challenges and identify potential interventions (see questionnaire in the table below).

N	Questions
1.	Are there any nearby mining or extraction activities? How do they impact the environment and the community's well-being?
2.	How is waste disposal managed in the community? Is there a proper waste management system in place, or is there evidence of improper waste dumping?
3.	What is the state of air quality in the community? Are there any noticeable sources of air pollution, such as burning of waste or biomass?
4.	Are there any industrial activities or agricultural practices nearby that potentially may release pollutants into the environment?
5.	Are there any specific health issues that might be related to environmental factors or climate change?
6.	How are energy needs met in the community? Are there renewable energy sources being utilized, or is there a reliance on fossil fuels?
7.	Is there any evidence of climate change impacts in the community? (e.g., extreme weather events, shifts in the timing of seasons, changes in precipitation patterns)
8.	How do changing weather patterns, such as extreme temperatures, droughts, floods, or storms, impact your daily lives and livelihoods?
9.	What are the common agricultural practices in the area? Are chemical fertilizers and pesticides used, and if so, are there potential risks to the environment and human health?

10.	What are the primary water sources for your community, and have you noticed any changes in their availability or quality due to climate-related factors?
11.	Is deforestation or land degradation (including erosion) a concern in the community?
12.	Are there any barriers or challenges hindering your community's ability to implement climate adaptation strategies?

II. Stakeholder consultations

During July 27 - August 1, 2023 Consultant's expert together with the EPIU's project implementation and monitoring department expert visited the pre-identified communities and had consultations with the relevant officials of the regional governments and communities.

The summary of the stakeholder consultations is as follows:

1. Shirak region: Ani consolidated community (consolidates 19 settlements), Artik consolidated community (consolidates 24 settlements), Ashotsk consolidated community (consolidates 25 settlements)

A. Mining or extraction activities

1. A.1. Ani community

- There are operational and non-operational mining sites in the territory of Dzorakap, Anipemza, Aniavan, Haykadzor and Bagravan settlements. The dust and dirt from the mining activities negatively impact the environment, air, humans, livestock, agricultural lands, etc.
- Heavy trucks and other machinery working in the mining sites destroy the roads of the nearby settlements.
- There is a closed stone mining site on about 5-6 hectares area between the Dzorakap and Maralik settlements. No conservation and reclamation works have been carried out.
- There is a non-operational (abandoned) stone mining site in Anipemza settlement dust from which (called Andesite Flour) is the cause of respiratory diseases among the inhabitants of Anipemza and Aniavan (Ani Kayaran) settlements.
- If a decision is made to recultivate and remediate land of any closed mining pit in the community there is around 250,000 m^3 of quality fertile soil extracted from different parts of the Shirak region during the construction of North-South Road Corridor.

1.A.2. Artik community

There are operational and non-operational mining sites that are mostly concentrated in the territory of Pemzashen, Tufashen, Nor Kyanq and Haritch settlements. The dust and dirt from the mining activities negatively impact the environment, air, humans, livestock, agricultural lands, etc. In addition, heavy trucks and other machinery working in the mining sites destroy the roads of the nearby settlements.

1.A.3. Ashotsk community

There is an operating basalt mining site in the Goghovit settlement. The dust and dirt from the mining activities negatively impact the environment, air, humans, livestock, agricultural lands, etc. In addition, heavy trucks and other machinery working in the mining site destroy the roads of the settlement.

B. Waste disposal and proper waste management

1.B.1. All 3 communities

- Waste disposal is organized by each communities'/settlements' respective services.
- There is not any centralized waste disposal or recycling facility neither in the communities nor in the region. Next to most of the settlements there are small landfills where the most waste from the settlements is dumped. Those landfills do not comply with any norms and standards defined by the legislation.
- There was a big project on construction of specialized solid waste disposal and recycling facility on the area of around 30 hectares near Beniamin settlement of Shirak region that should have been used for the whole Shirak region. However, the financing of that project was not ensured and facility had not been constructed.
- Ani and Ashotsk communities have shortage of waste collection trucks and waste bins
- In Artik community there is a need for reconstruction of 2 big mudflow canals and several bridges on those mudflow canals
- In the Mets Sepasar settlement of the Ashotsk community there is a biogas production facility. The waste from the settlement is used as a raw material. The capacity of the facility is 3,5 tons. The production capacity of the facility could be increased.

C. Major health concerns in the community

1.C.1. Ani consolidated community

Inhabitants of Anipemza and Aniavan (Ani Kayaran) settlements have respiratory diseases caused by the dust (called Andesite Flour) from the stone mining pit that has been exploited during the Soviet times. The mining pit is abandoned already 25 years.

1.C.2. Artik consolidated community

Inhabitants of Artik, Pemzashen, Tufashen and neighbouring settlements have

respiratory diseases caused by the dust from the stone mining pits.

1.C.3. Ashotsk consolidated community

No major health issues.

D. Energy sources

1.D.1. All 3 communities

Almost all the energy consumed in all 3 communities is produced from fossil fuels. There are some private renewable (vast majority of which is solar) energy productions, but these are of small volumes and for own use only.

E. Climate change impacts in the community

1.E.1. All 3 communities

In all 3 communities there is an obvious impact of climate change. The negative impact of the climate change is observed as:

- droughts and reduction of the available water
- severe winds
- hails
- heavy rainfall

The positive impacts of climate change are also observed in all 3 communities. Particularly, currently new varieties of fruits, berries and vegetables (including high-value ones), that were impossible to grow in the region, now are growing.

F. Agricultural practices

1.F.1. All 3 communities

- The main agricultural activities in all 3 communities traditionally have been livestock breeding, crop cultivation and horticulture. The farmers in all 3 communities are using mainly “traditional” fertilizers, such as Ammonium nitrate, Superphosphate and Potassium chloride.
- Current agricultural practices also contribute to increasing the degradation of the soil. Hence, application of more sustainable agricultural practices such as intercropping, mixed cropping, no-till or reduced tillage methods, use and application of composting, mulching, use of organic fertilizers, etc. can contribute to climate change mitigation and adaptation.

G. Water resources

1.G.1. All 3 communities

- The region is reach with water resources. At a depth of 6 meters and up to 200 meters there are enormous volumes of water reserves in the territory of many settlements. However, due to absence of new or uselessness of old reservoirs, pumping stations and water supply systems currently the access to drinking and irrigation water is a huge problem in almost all the settlements.

- One of the major issues is unsustainable use of water resources. Almost all the existing irrigation networks in all 3 communities are of open (soil) streams and it results in huge losses of water. Another example of unsustainable use of water resources is the use of drinking water for irrigation in many settlements.
- For increasing effectiveness of water use it is advised to provide portable irrigation sprinklers systems to settlements (please see the photos in the Annex). Although it is less efficient than drip irrigation or sub-irrigation due to waste of water through run-off and evaporation, but it is much more efficient compared to flood irrigation (through open (soil) canals) which is currently widely applied in vast majority of cases.
- In Ashotsk community currently undergoing construction of main irrigation pipeline. In 2023 they have constructed around 1,2 km of it and in 2024 will construct the remaining 2 km. After that there will be need for construction of around 35-40 irrigation network to “connect” the settlements and ensure irrigation there.
- Most importantly, there is a need for more thorough investigation and expert consultancy on more effective management and use of existing water reserves in the communities or as whole in the region.
- Near Zuygaghbyhur settlement of the Ashotsk community there is an open water fountain that is throwing out water for already more than 30 years and nothing is done to stop that or to use that water (please see the photo in the Annex).

H. Deforestation or land degradation (including erosion)

1.H.1. All 3 communities

- All 3 communities have huge areas of remote pastures, arable lands and hay meadows that are not used because of the absence of field roads. Instead, the population overuses the lands that are closer to settlements and the soil becomes more and more degraded. Some parts of those remote pastures, arable lands and hay meadows are of good condition and population could benefit from it, and simultaneously decreasing intensity of use of the lands that are closer to settlements, if access to those areas is enhanced by construction of the field roads.
- Absence of watering points for the livestock in the remote pasture areas is a big problem. For watering the livestock they have to cover long (up to 10 km) distances and, as a result, milk productivity is lower by 20-25% and the pastures degradation is more intense. In all communities there is a need for installation of livestock watering points in the remote pasture areas

- Another huge problem is deforestation in the whole community. There is an urgent need for conservation and restoration of forests areas, especially with drought-resistant trees, shrubs and plants. Establishment of forests and recreational parks in some settlements would help to enhance climate change mitigation and adaptation. From one side this will regulate biodiversity, absorb essential amount of carbon dioxide (CO^2), protect biodiversity in the region, and, at the same time, would support livelihoods and create more conducive conditions for tourism development in the region.
- In Artik consolidated community there is need for establishment of nursery for growing tree and shrubs seedlings
- A strong climate change mitigation and adaption measure would be establishment of forest belts (windbreakers - a row of trees at the edge of a field) next to agricultural fields and settlement roads in chosen settlements of each community (please see the photos in the Annex). They will protect agricultural crops by reducing evapotranspiration and acting as windbreaks (reduce erosive windspeeds). These several forest belts would become a model for further replication by other settlements.

I. Challenges hindering implementation of climate adaptation measures

1.I.1. All 3 communities

- Absence of new or uselessness of the old infrastructure, including for water management, energy production, waste management, roads, etc.
- Low level or luck of knowledge and awareness on climate change risks and adaption measures among the population, including regional and local officials
- Low level or luck of knowledge on sustainable agricultural practices among the population
- Lack of alternative income sources for the population and their overreliance on subsistence and non-effective agriculture
- Lack of financial resources

2. Lori region: Lermontovo consolidated community (consolidates 2 settlements, Molokan minority community), Fioletovo community (Molokan minority community)

A. Mining or extraction activities

2.A.1. Lermontovo community

- There is a closed stone mining site near Lermontovo settlement. Recultivation and remediation of lands is being carried out by the EPIU within another project.

B. Waste disposal and proper waste management

2.B.1. All 2 communities

- Waste disposal is organized by each communities'/settlements' respective services. There are no any major issues in this regard.

C. Major health concerns in the community

2.C.1. All 2 communities

No major health issues.

D. Energy sources

2.D.1. All 2 communities

Almost all the energy consumed in both communities is produced from the fossil fuels. There are some private renewable (vast majority of which is solar) energy productions, but these are of small volumes and for own use only.

E. Climate change impacts in the community

2.E.1. All 2 communities

No major adverse effects of climate change.

F. Agricultural practices

2.F.1. All 2 communities

- The main agricultural activities in both communities traditionally have been livestock breeding, crop cultivation and horticulture. The farmers in both communities are using mainly "traditional" fertilizers, such as Ammonium nitrate, Superphosphate and Potassium chloride.

- Current agricultural practices also contribute to increasing the degradation of the soil. Hence, application of more sustainable agricultural practices such as intercropping, mixed cropping, no-till or reduced tillage methods, use and application of composting, mulching, use of organic fertilizers, etc. can contribute to climate change mitigation and adaptation.

G. Water resources

2.G.1. All 2 communities

- One of the major issues is unsustainable use of water resources. There are several cases when irrigation networks are of open (soil) streams and it results in huge losses of water.

- In the Lermontovo community there is a need for reconstruction of 2 km of drinking water supply pipeline.

- For increasing effectiveness of water use it is advised to provide portable irrigation sprinklers systems to settlements (please see the photos in the Annex). Although it is less efficient than drip irrigation or sub-irrigation due to waste of water through run-off and evaporation, but it is much more efficient compared to flood irrigation (through open (soil) canals) which is currently widely applied in vast majority of cases.

H. Deforestation or land degradation (including erosion)

2.H.1. All 2 communities

- Both communities have huge areas of remote pastures, arable lands and hay meadows that are not used because of the absence of field roads. Some parts of those remote pastures, arable lands and hay meadows are of good condition and population could benefit from it, and simultaneously decreasing intensity of use of the lands that are closer to settlements, if access to those areas is enhanced by construction of the field roads.
- In Lermontovo community construction of 8 km field roads would allow to use more than 400 hectares of pastures.
- In Fioletovo community construction of 15 km field roads would allow to use 260 hectares of arable lands and 300 hectares of hay meadows.
- In Lermontovo community there are watering points for the livestock in the remote pasture areas. However, due to some construction mistakes in the piping system the watering points become obstructed (blocked up).
- In Fioletovo community there is a need for installation of livestock watering points in the remote pasture areas
- A strong climate change mitigation and adaption measure would be establishment of forest belts (windbreakers - a row of trees at the edge of a field) next to agricultural fields and settlement roads in chosen settlements of each community (please see the photos in the Annex).

I. Challenges hindering implementation of climate adaptation measures

2.I.1. All 2 communities

- Absence of new or uselessness of the old infrastructure, including for water management, energy production, waste management, roads, etc.
- Low level or luck of knowledge and awareness on climate change risks and adaption measures among the population, including regional and local officials
- Low level or luck of knowledge on sustainable agricultural practices among the population
- Lack of alternative income sources for the population and their overreliance on subsistence and non-effective agriculture
- Lack of financial resources

3. Tavush region: Dilijan consolidated community (consolidates 9 settlements)

A. Mining or extraction activities

3.A.1. Dilijan consolidated community

- No major issues

B. Waste disposal and proper waste management

3.B.1. Dilijan consolidated community

- Waste disposal is organized by the community's respective services.
- The sewage system of Dilijan city has maintenance problems and there is a need for a specialized vehicle for sewage system repairs.
- In Dilijan city there is a need for reconstruction of the mudflow canals and strengthening of the retaining walls

C. Major health concerns in the community

3.C.1. Dilijan consolidated community

No major health issues.

D. Energy sources

3.D.1. Dilijan consolidated community

Almost all the energy consumed in the community is produced from fossil fuels. There are some private renewable (vast majority of which is solar) energy productions, but these are of small volumes and for own use only.

E. Climate change impacts in the community

3.E.1. Dilijan consolidated community

In all 3 communities there is an obvious impact of climate change. The negative impact of the climate change is observed as:

- droughts and reduction of the available water
- severe winds
- hails
- heavy rainfall

F. Agricultural practices

3.F.1. Dilijan consolidated community

- The main agricultural activities in all 3 communities traditionally have been livestock breeding, horticulture and to a lesser extent crop cultivation. The farmers in the community are using mainly "traditional" fertilizers, such as Ammonium nitrate, Superphosphate and Potassium chloride.
- Current agricultural practices also contribute to increasing the degradation of the soil. Hence, application of more sustainable agricultural practices such as intercropping, mixed cropping, no-till or reduced tillage methods, use and application of composting, mulching, use of organic fertilizers, etc. can contribute to climate change mitigation and adaptation.

G. Water resources

3.G.1. Dilijan consolidated community

- The community is comparatively reach with the water resources. However, due to absence of new or uselessness of old reservoirs, pumping stations and water supply systems currently the access to drinking and irrigation water is a huge problem in almost all the settlements.
- In Dilijan city there is a need for construction of water reservoir and irrigation network that could ensure proper irrigation of the Dilijan and neighboring settlements.
- In Dilijan city there is a need for specialized equipment for cleaning of irrigation and drinking water headstreams.
- There is an urgent need to clean the Aghstev river which is suffering from waste and mud accumulation. Biodiversity is in danger.
- The Gosh Lake is a natural reservoir of water resources. The Gosh settlement in general, including Gosh Lake, is a very popular tourist destination. However, due to improper management, lack of attention and maintenance the lake is suffering from waste and mud accumulation, weed infestation, biodiversity is in danger, the fishes and crawfishes are in danger of extinction. There is an urgent need to clean the lake and surroundings.
- One of the major issues is unsustainable use of water resources. There are several cases when irrigation networks are of open (soil) streams, and it results in huge losses of water. Another example of unsustainable use of water resources is the use of drinking water for irrigation in many settlements.

H. Deforestation or land degradation (including erosion)

3.H.1. Dilijan consolidated community

- The community has huge areas of remote pastures, arable lands and hay meadows that are not used because of the absence of field roads. Instead, the population overuses the lands that are closer to settlements and the soil becomes more and more degraded. Some parts of those remote pastures, arable lands and hay meadows are of good condition and population could benefit from it, and simultaneously decreasing intensity of use of the lands that are closer to settlements, if access to those areas is enhanced by construction of the field roads.
- The results of land improvement (fertilization, restoration of vegetation) of the remote pastures, arable lands and hay meadows carried out during the previous project are very positive. However, still there is need for more similar works.
- Absence of watering points for the livestock in the remote pasture areas is a big problem.

- Another huge problem is deforestation in the whole community. There is an urgent need for conservation and restoration of forests areas, especially with drought-resistant trees, shrubs and plants. For instance, establishment of forests and recreational parks in some settlements would increase the forest areas and, at the same time, would create more conducive conditions for tourism development in the region.
- A strong climate change mitigation and adaptation measure would be establishment of forest belts (windbreakers - a row of trees at the edge of a field) next to agricultural fields and settlement roads in chosen settlements of the community.
- In Hovk and Haghartsin settlements there are several areas that are vulnerable to landslides. During the last several decades there were several cases of landslides in these areas. Although no major landslides have been recorded recently but the risk exists. In this regard it is advised to Initiate a comprehensive study on the causes of landslides and measures to prevent them in the future. Meanwhile, as an immediate action it is advised to establish forests (plant trees and shrubs) on hills to keep the soil packed and protected.

I. Challenges hindering implementation of climate adaptation measures

3.I.1. Dilijan consolidated community

- Absence of new or uselessness of the old infrastructure, including for water management, energy production, waste management, roads, etc.
- Low level or luck of knowledge and awareness on climate change risks and adaption measures among the population, including regional and local officials
- Low level or luck of knowledge on sustainable agricultural practices among the population
- Lack of alternative income sources for the population and their overreliance on subsistence and non-effective agriculture
- Lack of financial resources

4. Gegharkunik region: Sevan consolidated community (consolidates 12 settlements), "Sevan" National Park

A. Waste disposal and proper waste management

4.A.1. Sevan consolidated community

- Waste disposal is organized by the communities' respective services. The main landfill is located in Norashen community where the most waste from the community is dumped.

- There is no any centralized waste disposal or recycling facility. However, there is a preliminary agreement with the waste disposal or recycling facility in Hrazdan community for recycling of some part of sorted solid waste. For this purpose, the community has started sorting out waste.
- In Sevan city there is a need for reconstruction of 2,5 km mudflow canals

B. Energy sources

4.B.1. Sevan consolidated community

- In the Semyonovka settlement a private company is piloting know-how of one of its founders - a new model of electricity production wind turbine.
- In the whole Sevan consolidated community there is a need for installation of PV panels for 8 schools and 5 kindergartens to reduce electricity costs

C. Climate change impacts in the community

4.C.1. Sevan consolidated community

In the community there is an obvious impact of climate change. The negative impact of the climate change is observed as:

- droughts and reduction of the available water
- severe winds
- hails (in Semyonovka (Molokan minority community) and Tsovagyugh settlements there are no anti-hail stations)
- heavy rainfall
- frost in late spring

4.C.2. “Sevan” National Park

- All the climate events happening due to climate change in Gegharkunik region very negatively impact also the flora and fauna of the “Sevan” National Park.
- During the last 2 years up to 15,000 hectares of the Pine trees (70% Pinus sylvestris and 30% Crimean Pine, Pinus nigra) has died (dried up), especially near Akhtamar peninsula. The scientists do not understand the reasons. Many of them are of the opinion that this is due to diseases, but there are no any scientifically justified evidences of that fact.

D. Agricultural practices

4.D.1. Sevan city, Semyonovka (Molokan minority community) and Tsovagyugh settlements

- The main agricultural activities in the settlements traditionally have been livestock breeding, apiculture, crop cultivation and horticulture. The farmers in the community are using mainly “traditional” fertilizers, such as Ammonium nitrate, Superphosphate and Potassium chloride.

- Current agricultural practices also contribute to increasing the degradation of the soil. Hence, application of more sustainable agricultural practices such as intercropping, mixed cropping, no-till or reduced tillage methods, use and application of composting, mulching, use of organic fertilizers, etc. can contribute to climate change mitigation and adaptation.

E. Water resources

4.E.1. Sevan city, Semyonovka (Molokan minority community) and Tsovagyugh settlements and "Sevan" National Park

- The region is reach with water resources. However, due to absence of new or uselessness of old reservoirs, pumping stations and water supply systems currently the access to drinking and irrigation water is a huge problem in almost all the settlements.
- One of the major issues is unsustainable use of water resources. Almost all the existing irrigation networks in the community are of open (soil) streams and it results in huge losses of water.

F. Deforestation or land degradation (including erosion)

4.F.1. Semyonovka (Molokan minority community) and Tsovagyugh settlements

- Both settlements have huge areas of remote pastures, arable lands and hay meadows that are not used because of the absence of field roads. Instead, the population overuses the lands that are closer to settlements and the soil becomes more and more degraded. Some parts of those remote pastures, arable lands and hay meadows are of good condition and population could benefit from it, and simultaneously decreasing intensity of use of the lands that are closer to settlements, if access to those areas is enhanced by construction of the field roads.
- Absence of watering points for the livestock in the remote pasture areas is a big problem
- A strong climate change mitigation and adaptation measure would be establishment of forest belts (windbreakers - a row of trees at the edge of a field) next to agricultural fields and settlement roads in chosen settlements of each community.
- During the last 2 years up to 15,000 hectares of the Pine trees (70% Pinus sylvestris and 30% Crimean Pine, Pinus nigra) has died (dried up) in the territory of the "Sevan" National Park, especially near Akhtamar peninsula. The Park has a low-capacity nursery for tree seedlings and the staff of the Park has already planted around 243 hectares of new trees on the deforested territory. However, the numbers are very small. It is advised to establish a new nursery for growing tree and shrubs seedlings. It can grow seedlings not only for Park forestation needs, but also or sale. Selling the

seedlings could become a source of stable income and will ensure self-financing of its operations.

G. Challenges hindering implementation of climate adaptation measures

4.G.1. All 3 communities

- Absence of new or uselessness of the old infrastructure, including for water management, energy production, waste management, roads, etc.
- Low level or luck of knowledge and awareness on climate change risks and adaption measures among the population, including regional and local officials
- Low level or luck of knowledge on sustainable agricultural practices among the population
- Lack of alternative income sources for the population and their overreliance on subsistence and non-effective agriculture
- Lack of financial resources

5. Aragatsotn region: 8 consolidated communities, 115 settlements

A. Mining or extraction activities

5.A.1. Ashtarak consolidated community

- There is a closed stone mining site with around 25 hectares area in between Agarak and Parpi settlements of Ashtarak community. The dust and dirt from that mining ste negatively impacts the environment, air, humans, livestock, agricultural lands, etc. of Parpi, Bazmaghbyur, Ghazaravan, Agarak, Voskevaz, Oshakan and Ashtarak settlements. It is neighbouring Arzni-Shamiram water canal and after the recultivation and remediation of those lands it will be possible to ensure drip irrigation there.

B. Climate change impacts in the community

5.B.1. Whole region

In the whole region there is an obvious impact of climate change. The negative impact of the climate change is observed as:

- droughts and reduction of the available water
- severe winds
- hails
- heavy rainfall

C. Agricultural practices

5.C.1. Whole region

- The main agricultural activities in the region traditionally have been crop cultivation, horticulture and to a lesser extent livestock breeding. The

farmers of the region are using mainly “traditional” fertilizers, such as Ammonium nitrate, Superphosphate and Potassium chloride.

- Current agricultural practices also contribute to increasing the degradation of the soil. Hence, application of more sustainable agricultural practices such as intercropping, mixed cropping, no-till or reduced tillage methods, use and application of composting, mulching, use of organic fertilizers, etc. can contribute to climate change mitigation and adaptation.

D. Water resources

5.D.1. Whole region

- One of the major issues is unsustainable use of water resources. There are cases when irrigation networks are of open (soil) streams and it results in huge losses of water. Another example of unsustainable use of water resources is the use of drinking water for irrigation in several settlements.

- In Talin consolidated community there are settlements which have water scarcity. Close to those settlements there is a man-made water reservoir and it is possible to install an irrigation network from that source.

E. Deforestation or land degradation (including erosion)

5.E.1. Whole region

- The region has 131,000 hectares of pastures and only 15-20% of these lands are used. As a result, the population overuses those lands and the soil becomes more and more degraded. If field roads and watering points for the livestock are constructed in those pastures the farmers could benefit from it, simultaneously decreasing intensity of use of the lands that are overused.

- Another huge problem is deforestation in the whole region. There is an urgent need for conservation and restoration of forests areas, especially with drought-resistant trees, shrubs and plants. For instance, establishment of forest and recreational park in Amberd settlement (next to the road going to Stone Lake and Ashot Yerkat fortress) would increase the forest areas and, at the same time, would create more conducive conditions for tourism development in the region.

- A strong climate change mitigation and adaptation measure would be establishment of forest belts (windbreakers - a row of trees at the edge of a field) next to agricultural fields and settlement roads in chosen settlements of each community.

F. Challenges hindering implementation of climate adaptation measures

5.F.1. Whole region

- Absence of new or uselessness of the old infrastructure, including for water management, energy production, waste management, roads, etc.

- Low level or luck of knowledge and awareness on climate change risks and adaption measures among the population, including regional and local officials
- Low level or luck of knowledge on sustainable agricultural practices among the population
- Lack of alternative income sources for the population and their overreliance on subsistence and non-effective agriculture
- Lack of financial resources

6. Ararat region: Artashat city, Vedi consolidated community (consolidates 19 settlements), Ararat consolidated community (consolidates 12 settlements)

A. Mining or extraction activities

6.A.1. Whole region

- There is a Diatomit stone mining site in the territory of the region and cement production facility in the Ararat community. The dust and dirt from the mining and cement production activities negatively impact the environment, air, humans, livestock, agricultural lands, etc.

B. Waste disposal and proper waste management

6.B.1. Vedi consolidated community

- There is a need for construction of the waste disposal and recycling facility
- There is a need for establishment of forest belt around the waste disposal and recycling facility

C. Climate change impacts in the community

6.C.1. Whole region

In all 3 communities there is an obvious impact of climate change. The negative impact of the climate change is observed as:

- droughts and reduction of the available water
- severe winds
- hails
- heavy rainfall

D. Agricultural practices

6.D.1. Whole region

- The main agricultural activities in the region traditionally have been horticulture, aquaculture and to a lesser extent livestock breeding. The farmers of the region are using mainly “traditional” fertilizers, such as Ammonium nitrate, Superphosphate and Potassium chloride.

- Current agricultural practices also contribute to increasing the degradation of the soil. Hence, application of more sustainable agricultural practices such as intercropping, mixed cropping, no-till or reduced tillage methods, use and application of composting, mulching, use of organic fertilizers, etc. can contribute to climate change mitigation and adaptation.

E. Water resources

6.E.1. Whole region

- One of the major issues is unsustainable use of water resources. Most part of the existing irrigation networks in the region are of open (soil) streams and it results in huge losses of water. Another example of unsustainable use of water resources is the use of drinking water for irrigation in many settlements.

- Another major issue of unsustainable use of water is fisheries. There are many fisheries in the region, they use a huge amount of water and then the water is not disposed of properly and just lost.

F. Deforestation or land degradation (including erosion)

6.F.1. Whole region

- Ararat consolidated community has around 2,500 hectares of remote pastures most of which are not used because of the absence of field roads. Instead, the population overuses the lands that are closer to settlements and the soil becomes more and more degraded.

- If field roads and watering points for the livestock are constructed in the remote pastures of Sevakavan and Zangakatun settlements the farmers could use some additional 1,000 hectares of pastures, simultaneously decreasing intensity of use of the lands that are overused. The nearby water source is Arazap-2 reservoir and there will be need for construction of around 4,5 km water pipeline from there.

- In Lusashogh, Shaghap, Urtsadzor and Lanjanist settlements of the Vedi consolidated communities there are huge areas of remote pastures and there is a need for construction of field roads and watering points for livestock as much as possible.

- Another huge problem is deforestation in the whole region. There is an urgent need for conservation and restoration of forests areas, especially with drought-resistant trees, shrubs and plants.

- A strong climate change mitigation and adaptation measure would be establishment of forest belts (windbreakers - a row of trees at the edge of a field) next to agricultural fields and settlement roads in chosen settlements of each community.

G. Challenges hindering implementation of climate adaptation measures

6.G.1. Whole region

- Absence of new or uselessness of the old infrastructure, including for water management, energy production, waste management, roads, etc.
- Low level or luck of knowledge and awareness on climate change risks and adaption measures among the population, including regional and local officials
- Low level or luck of knowledge on sustainable agricultural practices among the population
- Lack of alternative income sources for the population and their overreliance on subsistence and non-effective agriculture
- Lack of financial resources

7. Armavir region: Khoy consolidated community (consolidates 17 settlements)

A. Energy sources

7.A.1. Khoy consolidated community

Almost all the energy consumed in Khoy community is produced from fossil fuels. There are some private renewable (vast majority of which is solar) energy productions, but these are of small volumes and for own use only. If PV panels for Arshaluys settlement administration are installed it would allow to reduce costs of electricity. With the preliminary agreement, the saved amounts could be directed towards implementation of climate adaptive measures in the settlements.

B. Climate change impacts in the community

7.B.1. Whole region

In the regions there is an obvious impact of climate change. The negative impact of the climate change is observed as:

- droughts and reduction of the available water
- severe winds
- hails
- heavy rainfall

C. Agricultural practices

7.C.1. Whole region

- The main agricultural activities in the region traditionally have been horticulture and to a lesser extent aquaculture. The farmers of the region are using mainly “traditional” fertilizers, such as Ammonium nitrate, Superphosphate and Potassium chloride.

- Current agricultural practices also contribute to increasing the degradation of the soil. Hence, application of more sustainable agricultural practices such as intercropping, mixed cropping, no-till or reduced tillage methods, use and application of composting, mulching, use of organic fertilizers, etc. can contribute to climate change mitigation and adaptation.

D. Water resources

7.D.1. Whole region

- One of the major issues is unsustainable use of water resources. Part of the existing irrigation networks in the region are of open (soil) streams (especially in Nalbandyan, Getashen, Shenavan, Khoy, etc.) and it results in huge losses of water. Another example of unsustainable use of water resources is the use of drinking water for irrigation in many settlements.
- Construction of around 3 km irrigation network would allow to irrigate around 60 hectares of agricultural land in Ferik community (Yazidi minority community).
- There is a need for construction of as long as possible irrigation network for up to 700 hectares of agricultural lands in several communities (including Arevadasht Koghbavan)
- In Armavir community construction of around 5 km irrigation network would allow to irrigate additionally around 14,4 hectares of agricultural land.
- In Armavir community they have planted 350 trees. Due to issues with the irrigation system 50 of those trees did not survive. There is a need for construction of around 1 km irrigation network will ensure survival and growth of the remaining trees.
- Another major issue of unsustainable use of water is the fisheries in Guy settlement. They use a huge amount of water and then the water is not disposed properly and just lost.
- A strong climate change mitigation and adaptation measure would be establishment of forest belts (windbreakers - a row of trees at the edge of a field) next to agricultural fields and settlement roads in chosen settlements of the community.

E. Deforestation or land degradation (including erosion)

7.E.1. Khoy consolidated community

- The major problem is deforestation in the whole region. There is an urgent need for conservation and restoration of forests areas, especially with drought-resistant trees, shrubs and plants.
- In the Khoy consolidated community: Establishment of forest and recreational park in Aygeshat settlement with around 20 hectares area

would increase the forest areas and would be useful for surrounding 3 settlements. There is also a need for establishment of around 10 hectares of forest and recreational park in the Arshaluys settlement (next to M-5 highway) and 8,000 m2 forest and recreational park in Aragats settlement.

- A strong climate change mitigation and adaptation measure would be establishment of forest belts (windbreakers - a row of trees at the edge of a field) next to agricultural fields and settlement roads in chosen settlements of each community.

F. Challenges hindering implementation of climate adaptation measures

7.F.1. Whole region

- Absence of new or uselessness of the old infrastructure, including for water management, energy production, waste management, roads, etc.
- Low level or luck of knowledge and awareness on climate change risks and adaption measures among the population, including regional and local officials
- Low level or luck of knowledge on sustainable agricultural practices among the population
- Lack of alternative income sources for the population and their overreliance on subsistence and non-effective agriculture
- Lack of financial resources

III. Identified problems and proposed interventions

Table below summarizes all the potential interventions that would mitigate negative impact on the environment and increase climate change adaption capacities of the communities that have been identified during the consultations with the stakeholders in each community. The proposed interventions are formulated taking into account the effectiveness and feasibility of implementation based on the existing preconditions, the priority and urgency, as well as other ongoing or planned similar interventions.

N	Region	Community	Problem	Proposed intervention
1.	Shirak	3 communities (Ani consolidated community, Artik consolidated community and Ashotsk consolidated community)	1.1. There are operational and non-operational stone mining sites in all 3 communities. The dust and dirt from the mining activities negatively impact the environment, air, humans, livestock, agricultural lands, etc.	1.1. Recultivation and remediation of lands, establishment of forests and recreational parks on the territories of the closed or adjacent to the open mining sites: 1.1.1. In Ani community: Recultivation and remediation of lands, establishment of forest and recreational park on the 5-6 hectares of Dzorakap settlement. There is around 250,000 m^3 of quality fertile soil available in the community. 1.1.2. In Ani community: Recultivation and remediation of lands, establishment of forest and recreational park on the territory of Anipemza settlement. There is around 250,000 m^3 of quality fertile soil available in the community. 1.1.3. In Artik community: Recultivation and remediation of lands, establishment of forests and recreational parks on the territories of Pemzashen, Tufashen, Nor Kyanq and Haritch settlements 1.1.4. In Ashotsk community: Establishment of forest on the territory of Goghovit settlement adjacent to the operational basalt mining site.
			1.2. Heavy trucks and other machinery working in the mining sites destroy the roads of the nearby settlements	1.2. In Ashotsk community: Construction of alternative road in Goghovit settlement for stone mining site trucks and machinery would allow to keep settlement road in good condition for a longer time period

			1.3. Absence of centralized waste disposal or recycling facilities	1.3. Construction of specialized solid waste disposal and recycling joint facility for Ani and Artik community or better, for the whole Shirak region 1.13.1 In the Mets Sepasar settlement of the Ashotsk community there is a biogas production facility. The waste from the settlement is used as a raw material. The capacity of the facility is 3,5 tons. If the production capacity of the facility is increased, it could process more waste. It could become a model for replication in other settlements.
			1.4. Mudflow management	1.4. In Artik city there is a need for reconstruction of 2 big mudflow canals and several bridges on those mudflow canals
			1.5. Sewage system in Arpeni settlement of Ashotsk community is out of order and the whole sewage flows into the river	1.5. Repair of the sewage system in the Arpeni settlement of Ashotsk community
			1.6. Scarcity of waste collection trucks and waste bins	1.6. Provision of waste collection trucks and waste bins to Ani and Ashotsk communities
			1.7. Almost all the energy consumed in all 3 communities is produced from the fossil fuels.	1.7. Support in installation of PV panels for all 3 community administrations that will allow to reduce costs electricity. 1.7.1. For instance, if PV panels with 170-180 kW power are built for municipality of Ashotsk community it would allow to reduce costs of electricity. With the preliminary agreement, the saved amounts could be directed towards implementation of climate adaptive measures in the settlements.
			1.8. Due to absence of new or uselessness of old reservoirs, pumping stations and water supply systems currently the access to drinking and irrigation water is a huge problem in almost all the settlements	1.8. Construction of water management systems, including reservoirs, pumping stations, main water supply and drip irrigation networks. Also, for increasing effectiveness of water use it is advised to provide portable irrigation sprinklers systems to settlements (please see the photos in the Annex). Although it is less efficient than drip irrigation or sub-irrigation due to waste of water through run-off and evaporation, but it is much more efficient

				compared to flood irrigation (through open (soil) canals) which is currently widely applied in vast majority of cases. 1.8.1. In Ani community: Construction of a new pumping station and irrigation systems in the cluster consisting of Gusanagyugh, Shirkavan, Isahakyan, Aghin and other neghbouring settlements would ensure irrigation of around 2,000 hectares of land in that part of the community. 1.8.2. In Ani community: Construction of a new pumping station and irrigation systems in the Sarnaghbyur settlement would ensure irrigation of more than 700 hectares of (more than 80 hectares of Sarnaghbyur, more than 260 hectares of Dzorakap and more than 350 hectares of Maralik) of agricultural land 1.8.3. In Artik community: Construction of an irrigation network in Anushavan, Vardakar and Nor Kyanq settlements (ca. AMD 31 million) 1.8.4. In Ashotsk community: currently undergoing construction of main irrigation pipeline. In 2023 they have constructed around 1,2 km of it and in 2024 will construct the remaining 2 km. After that there will be need for construction of around 35-40 irrigation network to “connect” the settlements and ensure irrigation there. 1.8.5. In Ashotsk community: Construction of 7-8 km irrigation system in Saragyugh settlement would ensure irrigation of more than 250 ha of lands 1.8.6. In Ashotsk community: Construction of 7-8 km irrigation system in Dzorashen settlement would ensure irrigation of more than 200 ha of lands of Dzorashen and additional 5 settlements 1.8.7. In Ashotsk community: There is a need for construction of inner irrigation system in Goghovit settlement which would ensure irrigation of lands backyard orchards of inhabitants

				1.8.8. In Ashotsk community: Koghamarg settlement has 3,5 km irrigation network and construction of 2 km pipeline would ensure irrigation of additional 180 ha of lands. If the retaining wall of the existing reservoir is overbuilt (raised the height) then more water could be accumulated and later more lands could be irrigated. 1.8.9. In Ashotsk community: Near Zuygaghbyhur settlement there is an open water fountain that has been throwing out water for already more than 30 years and the surrounding territory became a swamp (marsh). So far, nothing has been done to stop that or to use that water (please see the photo in the Annex). It is advised to investigate the case more comprehensively and find any solution to the problem.
			1.9. The region is reach with the water resources. However, there is no any water management and use strategy.	1.9. Support in thorough investigation and expert consultancy on development and implementation of water management and use strategy
			1.10. All 3 communities have huge areas of remote pastures, arable lands and hay meadows that are not used because of the absence of field roads. Instead, the population overuse the lands that are closer to settlements and the soil becomes more and more degraded.	1.10. Construction of the field roads leading to remote pastures, arable lands and hay meadows. Simultaneously, restoration of vegetation at the degraded lands is required. 1.10.1. Construction of field roads in remote areas of Saragyugh settlement of the Ashotsk community would allow to use around 120 ha pastures. 1.10.2. Construction of field roads in remote areas of Musaler settlement of the Ashotsk community would allow to use around 100 ha pastures. 1.10.3. Construction of around 30 km field roads in remote areas of Dzorashen settlement of the Ashotsk community would allow to use around 200 ha pastures for Dzorashen and neghbouring 5 settlements.

			1.11. Scarcity of livestock watering points for the livestock in the remote pasture areas.	1.11. Installation of livestock watering points in the remote pasture areas: 1.11.1.Ani community has already installed 5 watering points in different pasture areas, but installation of at least 6-7 additional water points is still required. 1.11.2.There is a need for installation of livestock watering points in the remote pasture areas of the Dzorashen settlement of the Ashotsk community.
			1.12. Deforestation	1.12. Conservation and restoration of forests areas, especially with drought-resistant trees, shrubs and plants. Establishment of forests and recreational parks in some settlements would help to enhance climate change mitigation and adaptation. From one side this will regulate biodiversity, absorb essential amount of carbon dioxide (CO2), protect biodiversity in the region, and, at the same time, would support livelihoods and create more conducive conditions for tourism development in the region. 1.12.1. In Ani community: Establishment of forest and recreational park in Sarnaghbyur settlement which has many tourist attractions (place of pilgrimage (Zagha), number of religious and historical monuments, etc.) and is a popular tourist destination. 1.12.2. In Artik community: Establishment of small park or at least construction of rest rooms near the Harichavank Monastery in Harich settlement which is a popular tourist destination. 1.12.3. In Ashotsk community: Establishment of nursery for growing tree and shrubs seedlings

			1.13. Land degradation	1.13. One of the crucial climate change adaptation measures would be establishment of forest belts (windbreakers - a row of trees at the edge of a field) for agricultural fields in chosen settlements of each community (please see the photos in the Annex). They will protect agricultural crops by reducing evapotranspiration and acting as windbreaks (reduce erosive windspeeds). These several forest belts would become a model for further replication by other settlements.
2.	Lori	2 communities with Molokan ethnic minority (Lermontovo consolidated community and Fioletovo community)	2.1. Almost all the energy consumed in both communities is produced from the fossil fuels.	2.1. Support in installation of PV panels for both community administrations that will allow to reduce electricity costs. 2.1.1. For instance, if PV panels are built for Fioletovo administration then on average monthly AMD 100,000 electricity costs could be saved. With the preliminary agreement, the saved amounts could be directed towards implementation of climate adaptive measures.
			2.2. Due to absence of new or uselessness of old reservoirs, pumping stations and water supply systems currently the access to drinking and irrigation water is a huge problem in almost all the settlements	2.2. Construction of water management systems, including reservoirs, pumping stations, main water supply and drip irrigation networks. 2.2.1. In Lermontovo community: There is a need for reconstruction of 2 km of drinking water supply pipeline.
			2.3. Both communities have huge areas of remote pastures, arable lands and hay meadows that are not used because of the absence of field roads. Some parts of those remote pastures, arable lands and hay meadows are not accessible due to absence of field roads.	2.3. Construction of the field roads leading to remote pastures, arable lands and hay meadows. 2.3.1. In Lermontovo community construction of 8 km field roads would allow to use more than 400 hectares of pastures. 2.3.2. In Fioletovo community construction of 15 km field roads would allow to use 260 hectares of arable lands and 300 hectares of hay meadows.

			2.4. Scarcity of the watering points for livestock in the remote pasture areas.	2.4. Installation of watering points for livestock in the remote pasture areas: 2.4.1. In Lermontovo community: There is a need for fixing construction mistakes in the piping system because of which the existing watering points become obstructed (blocked up). 2.4.2. There is a need for installation of livestock watering points in the remote pasture areas of the Fioletovo community.
3.	Tavush	Dilijan consolidated community	2.5. The sewage system of the Dilijan city has maintenance problems	3.1. There is a need for a specialized vehicle for sewage system repairs
			2.6. Mudflow management	3.2. In Dilijan city there is a need for reconstruction of the mudflow canals and strengthening of the retaining walls
			2.7. Due to absence of new or uselessness of old reservoirs, pumping stations and water supply systems currently the access to drinking and irrigation water is a huge problem in almost all the settlements	3.3. Construction of water management systems, including reservoirs, pumping stations, main water supply and drip irrigation networks. Also, for increasing effectiveness of water use it is advised to provide portable irrigation sprinklers systems to settlements. Although it is less efficient than drip irrigation or sub-irrigation due to waste of water through run-off and evaporation, but it is much more efficient compared to flood irrigation (through open (soil) canals) which is currently widely applied in vast majority of cases. 3.3.1. In Dilijan city there is a need for construction of water reservoir and irrigation network that could ensure proper irrigation of the Dilijan and neighboring settlements. 3.3.2. In Dilijan city there is a need for a specialized equipment for cleaning of irrigation and drinking water headstreams 3.3.3. In Teghut settlement: Construction of 6-7 km irrigation network would allow to irrigate around 70 hectares of agricultural land

				3.3.4. In Gosh settlement: Construction of 4 km irrigation network would allow to irrigate around 100 hectares of agricultural land 3.3.5. In Khachardzan settlement: There is a need for construction of 1,5 km irrigation network and installation of a pump 3.3.6. In Haghartsin settlement: Construction of 6-7 km irrigation network would allow to irrigate around 2,700 hectares of lands 3.3.7. In Aghavnavank settlement: Construction of 3 km irrigation network would allow to irrigate around 25-30 hectares of agricultural land 3.3.8. In Hovk settlement: Construction of 3 km irrigation network would allow to irrigate around 300 hectares of agricultural land
			2.8. Aghstev river is suffering from waste and mud accumulation. The biodiversity is in danger.	3.4. There is an urgent need for cleaning the Aghstev river
			2.9. The Gosh Lake is a natural reservoir of water resources. The Gosh settlement in general, including Gosh Lake is a very popular tourist destination. However, due to improper management, lack of attention and maintenance the lake is suffering from waste and mud accumulation, weed infestation, the biodiversity is in danger, the fishes and crawfishes are in danger of extinction.	3.5. There is an urgent need for cleaning Gosh Lake and surroundings.
			2.10. The community has huge areas of remote pastures, arable	3.6. Construction of the field roads leading to remote pastures, arable lands and hay meadows.

			lands and hay meadows that are not used because of the absence of field roads. Instead, the population overuse the lands that are closer to settlements and the soil becomes more and more degraded.	3.6.1. In Teghut settlement: Construction of 10 km field roads would allow to use 3000 hectares of pasture 3.6.2. In Khachardzan settlement: Construction of 14 km field roads would allow to use 600 hectares of arable land and hay meadows 3.6.3. In Haghartsin settlement: Construction of 12-13 km field roads would allow to use 9,000 hectares of arable land and pastures 3.6.4. In Aghavnavank settlement: Construction of 5 km field roads would allow to use 1,500 hectares of arable land and pastures 3.6.5. In Hovk settlement: Construction of 6 km field roads would allow to use up to 800 hectares of arable land and pastures
			2.11. The results of land improvement (fertilization, restoration of vegetation) of the remote pastures, arable lands and hay meadows carried out during the previous project are very positive. However, still there is need for more similar works.	3.7. Land improvement (fertilization, restoration of vegetation) of the remote pastures, arable lands and hay meadows 3.7.1. In Teghut settlement there is a need for land improvement (fertilization, restoration of vegetation) of around 800 hectares of hay meadows and pastures 3.7.2. In Gosh settlement there is a need for land improvement (fertilization, restoration of vegetation) of around 150 hectares of arable land 3.7.3. In khachardzan settlement there is a need for land improvement (fertilization, restoration of vegetation) of around 60 hectares of arable land 3.7.4. In Haghartsin settlement there is a need for land improvement (fertilization, restoration of vegetation) of around 1000 hectares of arable land and pastures 3.7.5. In Aghavnavank settlement there is a need for land improvement (fertilization, restoration of vegetation) of around 200 hectares of arable land and pastures

				3.7.6. In Hovk settlement there is a need for land improvement (fertilization, restoration of vegetation) of around 700 hectares of arable land, hay meadows and pastures
			2.12. Scarcity of the livestock watering points for the livestock in the remote pasture areas.	3.8. Installation of livestock watering points in the remote pasture areas: 3.8.1. In Gosh settlement there is a need for installation of 1 watering point in remote pastures 3.8.2. In Aghavnavank settlement there is a need for installation of 1 watering point in remote pastures
			2.13. In Hovk and Haghartsin settlements there are several areas that are vulnerable to landslides and during the last several decades there were several cases of landslides in these areas.	3.9. Initiate a comprehensive study on the causes of landslides and measures to prevent them in the future. Meanwhile, as an immediate action it is advised to establish forests (plant trees and shrubs) on hills to keep the soil packed and protected.
			2.14. Land degradation	3.10. One of the crucial climate change adaptation measures would be establishment of forest belts (windbreakers - a row of trees at the edge of a field) for agricultural fields in chosen settlements of each community (please see the photos in the Annex). They will protect agricultural crops by reducing evapotranspiration and acting as windbreaks (reduce erosive windspeeds). These several forest belts would become a model for further replication by other settlements.
4.	Gegharkunik	Sevan city, Semyonovka (Molokan minority community) and Tsovagyugh settlements	4.1. Mudflow management	4.1. In Sevan city there is a need for reconstruction of 2,5 km mudflow canals
			4.2. Energy sources	4.2. In the whole Sevan consolidated community there is a need for installation of PV panels for 8 schools and 5 kindergartens to reduce electricity costs
			4.3. Due to absence of new or uselessness of old reservoirs, pumping stations and water supply	4.3. Construction of water management systems, including reservoirs, pumping stations, main water supply and drip irrigation networks.

		(Sevan consolidated community)	systems currently the access to drinking and irrigation water is a huge problem in almost all the settlements	4.3.1. In Semyonovka settlement: Construction of 5 km of main irrigation pipe and 5 km of irrigation network would allow to irrigate around 20 hectares of agricultural land and ensuring sufficient water for breeding around 2,000 livestock existing in the settlements 4.3.2. In Tsovagyugh settlement: Construction of 5 km of main irrigation pipe and 20 km of irrigation network would allow to irrigate up to 90 hectares of agricultural land and ensuring sufficient water for breeding around 2,700 livestock existing in the settlements
			4.4. Semyonovka and Tsovagyugh settlements have huge areas of remote pastures, arable lands and hay meadows that are not used because of the absence of field roads. Instead, the population overuse the lands that are closer to settlements and the soil becomes more and more degraded.	4.4. Construction of the field roads leading to remote pastures, arable lands and hay meadows. 4.4.1. Construction of 20-25 km of field roads in remote areas of Semyonovka settlement would allow to use around 5,700 hectares of pastures, arable lands and hay meadows 4.4.2. Construction of 50 km of field roads in remote areas of Tsovagyugh settlement would allow to use around 3,000 hectares of pastures, arable lands and hay meadows
			4.5. There is a need for land improvement (fertilization, restoration of vegetation) of the remote pastures, arable lands and hay meadows	4.5. Land improvement (fertilization, restoration of vegetation) of the remote pastures, arable lands and hay meadows 4.5.1. In Semyonovka settlement there is a need for land improvement (fertilization, restoration of vegetation) of around 800 hectares of hay meadows and pastures 4.5.2. In Tsovagyugh settlement there is a need for land improvement (fertilization, restoration of vegetation) of around 800 hectares of hay meadows and pastures
			4.6. Scarcity of livestock watering points for the livestock in the remote pasture areas.	4.6. Installation of livestock watering points in the remote pasture areas: 4.6.1. There is a need for installation of 2 livestock watering points in the remote pasture areas of the Semyonovka settlement

				4.6.2. There is a need for installation of 1 livestock watering point in the remote pasture areas of the Tsovagyugh settlement
			4.7. Semyonovka and Tsovagyugh settlements have huge areas of remote pastures, arable lands and hay meadows that are not used because of the absence of field roads. Instead, the population overuse the lands that are closer to settlements and the soil becomes more and more degraded	4.7. Construction of the field roads leading to remote pastures, arable lands and hay meadows. 4.7.1. Construction of field roads in remote areas of Semyonovka settlement of the Ashotsk community would allow to use around 120 ha pastures 4.7.2. Construction of field roads in remote areas of Tsovagyugh settlement of the Ashotsk community would allow to use around 120 ha pastures
		"Sevan" National park	4.8. During the last 2 years up to 15,000 hectares of the Pine trees (70% Pinus sylvestris and 30% Crimean Pine, Pinus nigra) has died (dried up)	4.8. Establishment of a new nursery for growing tree and shrubs seedlings. It can grow seedlings not only for Park forestation needs, but also for sale. Selling the seedlings could be a source of stable income and would ensure self-financing of its operations. In the territory of the Park the following types of the trees and shrubs have proven resiliency in and adaptability to local climate and environment: Maple, Birch, Breadfruit, Oak, Junipers, Apricot, etc.
5.	Aragatsotn	Aragatsotn region	5.1. There is a closed stone mining site with around 25 hectares area in between Agarak and Parpi settlements of Ashtarak community. The dust and dirt from that mining ste negatively impacts the environment, air, humans, livestock, agricultural lands, etc. of Parpi, Bazmaghbyur, Ghazaravan, Agarak, Voskevaz, Oshakan and Ashtarak settlements.	5.1. Recultivation and remediation of lands, establishment of forests and recreational parks on the territories of the closed mining site. It is neighboring Arzni-Shamiram water canal and after the recultivation and remediation of those lands it will be possible to ensure drip irrigation there

			5.2. In Talin consolidated community there are settlements which have water scarcity.	5.2. Close to those settlements there is a man-made water reservoir, and it is possible to install an irrigation network from that source.
			5.3. The region has 131,000 hectares of pastures and only 15-20% of these lands are used. As a result, the population overuse those lands and the soil becomes more and more degraded	5.3. If field roads and watering points for the livestock are constructed in those pastures the farmers could benefit from it, simultaneously decreasing intensity of use of the lands
			5.4. Deforestation. There is an urgent need for conservation and restoration of forests areas, especially with drought-resistant trees, shrubs and plants.	5.4. Establishment of forest and recreational park in Amberd settlement (next to the road going to Stone Lake and Ashot Yerkat fortress) would increase the forest areas and, at the same time, would create more conducive conditions for tourism development in the region.
			5.5. Land degradation	5.5. A strong climate change mitigation and adaption measure would be establishment of forest belts (windbreakers - a row of trees at the edge of a field) next to agricultural fields and settlement roads in chosen settlements of each community
6.	Ararat	Vedi, Ararat and Artashat consolidated communities	6.1. Absence of centralized waste disposal or recycling facilities	6.1. There is a need for construction of the waste disposal and recycling facility in the Vedi community and establishment of forest belt around the waste disposal and recycling facility
			6.2. Due to absence of new or uselessness of old reservoirs, pumping stations and water supply systems currently the access to drinking and irrigation water is a huge problem in almost all the settlements	6.2. Construction of water management systems, including reservoirs, pumping stations, main water supply and drip irrigation networks. Also, for increasing effectiveness of water use it is advised to provide portable irrigation sprinklers systems to settlements (please see the photos in the Annex). Although it is less efficient than drip irrigation or sub-irrigation due to waste of water through run-off and evaporation, but it is much more efficient compared to flood irrigation (through open (soil) canals) which is currently widely applied in vast majority of cases

				6.2.1. Reconstruction of pumping station and replacement of the old irrigation network connected with the Mkhchyan pumping station 6.2.2. Reconstruction of pumping station and replacement of the old irrigation network connected with the Arazap-1 pumping station (4.5 km with 730 mm pipes) 6.2.3. In Vedi community: Construction of a 4 km irrigation network (closed or half-pipe) in Goravan settlement 6.2.4. In Vedi community: Construction of a 1.5 km irrigation network (even with half-pipe) in Vosketap settlement would allow to irrigate 40 hectares of agricultural lands. There is a need for a change of water by 200 meters. 6.2.5. In Vedi community: Construction of a 2.5 km irrigation network (even with half-pipe) in Nor Kyanq settlement 6.2.6. In Vedi community: Construction of a 8.6 km irrigation network and 5 (2mx6m – 4 and 3x6m - 1) reservoir in Urtsadzor settlement would allow to irrigate more than 25 hectares of agricultural lands. 6.2.7. In Vedi community: Construction of a 3.3 km irrigation network and 5 reservoirs (2mx6m – 4 and 1x6m - 1) in Shaghap settlement would allow to irrigate 560 hectares of pastures 6.2.8. In Vedi community: Construction of a 2.3 km irrigation network and 3 reservoirs (2mx6m) in Lusashogh settlement would allow to irrigate more than 350 hectares of pastures 6.2.9. In Vedi community: Construction of a 0.2 km irrigation network and 2 reservoirs (2mx6m) in Lanjanist settlement
			6.3. Another major issue of unsustainable use of water are the fisheries. There are many fisheries in the region, they use a huge amount of water and then the	6.3. Support in introduction of circular production and resource efficient and clean production (RECP) technologies and practices.

			water is not disposed properly and just lost.	
			6.4. All 3 communities have huge areas of remote pastures, arable lands and hay meadows that are not used because of the absence of field roads. Instead, the population overuse the lands that are closer to settlements and the soil becomes more and more degraded	6.4. Construction of the field roads leading to remote pastures, arable lands and hay meadows. Simultaneously, restoration of vegetation at the degraded lands is required 6.4.1. In Vedi community: Construction of 116 km field roads in remote areas of Urtsadzor settlement 6.4.2. In Vedi community: Construction of 3.3 km field roads in remote areas of Shaghap settlement 6.4.3. In Vedi community: Construction of 21.2 km field roads in remote areas of Lusashogh settlement 6.4.4. In Vedi community: Construction of 17 km field roads in remote areas of Lanjanist settlement 6.4.5. If field roads and watering points for the livestock are constructed in the remote pastures of Sevakavan and Zangakatun settlements the farmers could use some additional 1,000 hectares of pastures, simultaneously decreasing intensity of use of the lands that are overused. The nearby water source is Arazap-2 reservoir and there will be need for construction of around 4,5 km water pipeline from there
			6.5. Scarcity of the livestock watering points for the livestock in the remote pasture areas	6.5. Installation of livestock watering points in the remote pasture areas: 6.5.1. There is a need for installation of at least 4 livestock watering points in the remote pasture areas of the Vedi community
			6.6. Land degradation	6.6. One of the crucial climate change adaptation measures would be establishment of forest belts (windbreakers - a row of trees at the edge of a field) for agricultural fields in chosen settlements of each community (please see the photos in the Annex). They will protect agricultural crops by reducing evapotranspiration and acting as windbreaks (reduce erosive windspeeds). These several

				forest belts would become a model for further replication by other settlements.
7.	Armavir	Armavir region	7.1. Almost all the energy consumed in the Khoy consolidated community is produced from the fossil fuels.	7.1. Support in installation of PV panels for all 3 community administrations that will allow to reduce costs electricity 7.1.1. Khoy consolidated community: If PV panels for Arshaluys settlement administration are installed it would allow to reduce costs of electricity. With the preliminary agreement, the saved amounts could be directed towards implementation of climate adaptive measures in the settlements.
			7.2. One of the major issues is unsustainable use of water resources. Part of the existing irrigation networks in the region are of open (soil) streams (especially in Nalbandyan, Getashen, Shenavan, Khoy, etc.) and it results in huge losses of water. Another example of unsustainable use of water resources is use of drinking water for irrigation in many settlements	7.2. Construction of water management systems, including reservoirs, pumping stations, main water supply and drip irrigation networks 7.2.1. Construction of around 3 km irrigation network would allow to irrigate around 60 hectares of agricultural land in Ferik community (Yazidi minority community). 7.2.2. There is a need for construction of as long as possible irrigation network for up to 700 hectares of agricultural lands in several communities (including Arevadasht Koghbavan) 7.2.3. In Armavir community construction of around 5 km irrigation network would allow to irrigate additionally around 14,4 hectares of agricultural land. 7.2.4. In Armavir community they have planted 350 trees. Due to issues with the irrigation system 50 of those trees did not survive. There is a need for construction of around 1 km irrigation network will ensure survival and growth of the remaining trees.
			7.3. Another major issue of unsustainable use of water are the fisheries in Guy settlement. They use a huge amount of water and	7.3. Support in introduction of circular production and resource efficient and clean production (RECP) technologies and practices.

			then the water is not disposed properly and just lost.	
			7.4. Land degradation	7.4. One of the crucial climate change adaption measures would be establishment of forest belts (windbreakers - a row of trees at the edge of a field) for agricultural fields in chosen settlements of each community.
8.	Armenia	General for all the regions, communities and settlements	8.1. Low level or luck of knowledge and awareness on climate change risks and adaption measures among the population, including regional and local officials	8.1. Provision of capacity development events (trainings, workshops, etc.) and awareness raising campaigns (info sessions, tours, etc., as well as dissemination of info leaflets) among the population, including regional and local officials
			8.2. Low level or luck of knowledge on sustainable agricultural practices among the farmers	8.2. Provision of capacity development events (trainings, workshops, etc.) to the farmers (trainings, study visits, establishment of demo farms where on-job trainings will be conducted, etc.) on sustainable agricultural practices
			8.3. Lack of alternative income sources for the population and their overreliance on subsistence and non-effective agriculture	8.3. Provision of model greenhouses, food frying equipment/facilities, small fruits and berries processing facilities, small fisheries with circular technology, etc.
			8.4. Lack of financial resources	8.4. Development of capacities of the farmers and local officials on fundraising, project proposal writing and project implementation, etc.

Photos








ANNEX 1. – Gender Analysis and Action Plan

Enhancing the Land-based Adaptation of Communities Adjacent to Arid Zones and Forest Protected Areas of Armenia by Duplicating and Expanding the Successful Mechanisms of the Previous Project

1. Project Information

Project Title:	Enhancing the Land-based Adaptation of Communities Adjacent to Arid Zones and Forest Protected Areas of Armenia by Duplicating and Expanding the Successful Mechanisms of the Previous Project
Project Grant Amount *(USD)*:	3,780,513
Location *(country, regions)*:	Armenia, Ararat, Tavush and Gegharkunik marzes *(regions)*
Implementing Entity:	"Environmental Project Implementation Unit" State Agency

2. Project Objectives

The **overall objective** of the project is reducing the climate risk vulnerability of local communities living adjacent to the "Khosrov Forest", "Dilijan" and "Lake Sevan" National Parks through promoting sustainable and climate-resilient agricultural practices in degraded areas and buffer zones, thereby reducing climate-related risks and vulnerabilities in production systems while sustaining protected areas. Through the implementation of community-based, climate-smart agricultural practices, strengthening of value chains and technology transfer, and raising awareness and capacity building, the **Project aims** to enhance the adaptive capacity of vulnerable rural communities, improve land degradation neutrality, and contribute to the long-term sustainability of agricultural ecosystems.

The project is structured into three main components, each yielding specific outcomes. Component 1 prioritizes community-based, gender-inclusive interventions to bolster the adaptive capacity of the agricultural sector. Component 2 supports climate-smart agricultural value chains, thereby establishing and sustaining income-generating initiatives for the involved communities. Component 3 encompasses capacity building, awareness raising, local training, knowledge management, and information dissemination to fortify national strategies and policies concerning climate change adaptation. The primary interventions will be executed in the adjacent communities neighboring the "Khosrov Forest" State Reserve and "Dilijan" National Park.

The project will benefit **20,000** direct beneficiaries out of which minimum 40% are women resided in 6 communities and 10 settlements. The number of indirect beneficiaries is around **90,000**, which is entire population of the targeted settlements.

3. Objective of Gender Analysis

The gender analysis serves the purpose of depicting the gender dynamics in the Republic of Armenia, particularly within the project's target regions. It aims to shed light on the variations in roles, activities, necessities, opportunities, challenges, and potential risks encountered by different groups and sub-groups involved in agriculture within these areas. This analysis draws upon primary data acquired during field assessments and complements it with pertinent secondary data from national reports. Its primary function lies in shaping the Gender Action Plan (GAP) provided in this document. The GAP, in turn, outlines project initiatives designed to address the gender disparities identified within the intervention areas.

4. Policy and Regulatory Framework

4.1 International Context

Since independence, the Armenian Government has been taking extensive steps to align the national legislation with the international documents in the area of gender equality, among which are the Convention on the Elimination of All Forms of Discrimination against Women (CEDAW), the Beijing Declaration and the Platform for Action, the Sustainable Development Goals, as well as the Council of Europe Declarations. In its preamble, CEDAW explicitly acknowledges that "extensive discrimination against women continues to exist", and emphasizes that such discrimination "violates the principles of equality of rights and respect for human dignity".

As defined in article 1, discrimination is understood as *"any distinction, exclusion or restriction made on the basis of sex...in the political, economic, social, cultural, civil or any other field"*. The Convention gives positive affirmation to the principle of equality by requiring States parties to take "all appropriate measures, including legislation, to ensure the full development and advancement of women, for the purpose of guaranteeing them the exercise and enjoyment of human rights and fundamental freedoms on a basis of equality with men"(article 3). Especially Article 14 invites States Parties to take into account the particular problems faced by rural women and the significant roles which rural women play in the economic survival of their families, including their work in the non-monetized sectors of the economy, as well as to take all appropriate measures to ensure the application of the provisions of the present Convention to women in rural areas.

CEDAW also requires for rural women the right: “(a) To participate in the elaboration and implementation of development planning at all levels; (b) To have access to adequate health care facilities, including information, counselling and services in family planning; (c) To benefit directly from social security programmes; (d) To obtain all types of training and education, formal and non-formal, including that relating to functional literacy, along with, inter alia, the benefit of all community and extension services, in order to increase their technical proficiency; (e) To organize self-help groups and co-operatives in order to obtain equal access to economic opportunities through employment or self-employment; (f) To participate in all community activities; (g) To have access to agricultural credit and loans, marketing facilities, appropriate technology and equal treatment in land and agrarian reform as well as in land

resettlement schemes; (h) To enjoy adequate living conditions, particularly in relation to housing, sanitation, electricity and water supply, transport and communications".

The 1995 Beijing Platform for Action (BPoA) flagged 12 key areas where urgent action was needed to ensure greater equality and opportunities for women and men, girls and boys. It also laid out concrete ways for countries to bring about change. One of the flagged areas is on **Women and the Economy**. Even being directed to economic development area in general, the strategic objectives set forth in the BPoA are fully applicable to the situation in Agriculture and the development of sustainable agriculture in Armenia, and are as follows: Strategic objective F.1. Promote women's economic rights and independence, including access to employment, appropriate working conditions and control over economic resources; Strategic objective F.2. Facilitate women's equal access to resources, employment, markets and trade; Strategic objective F.3. Provide business services, training and access to markets, information and technology, particularly to low-income women; Strategic objective F.4. Strengthen women's economic capacity and commercial networks; Strategic objective F.5. Eliminate occupational segregation and all forms of employment discrimination; Strategic objective F.6. Promote harmonization of work and family responsibilities for women and men.

Transforming our world: the 2030 Agenda for Sustainable Development, is a plan of action for people, planet and prosperity. It also seeks to strengthen universal peace in larger freedom. It recognize that eradicating poverty in all its forms and dimensions, including extreme poverty, as the greatest global challenge and an indispensable requirement for sustainable development. All countries shall implement this plan with 17 Sustainable Development Goals and 169 targets. By adopting this document the governments agreed, inter alia to "devote resources to developing rural areas and sustainable agriculture and fisheries, supporting smallholder farmers, especially women farmers, herders and fishers in developing countries"; to "adopt policies which increase productive capacities, productivity and productive employment; financial inclusion; sustainable agriculture"; and to achieve the goals on promotion of **sustainable agriculture** and achievement of **gender equality** and **empowerment of all women and girls**.

The European documents in this field are very close to the UN documents primarily because the latter were initiated and adopted for the most part by the European entities and groups of countries. Gender equality has been and still is a top priority for the Council of Europe, OSCE and the European Union. The Council of Europe stated time and again in its declarations[29] that equality of women and men is not only a principle of human rights but also a sine qua non of democracy, a fundamental criterion of pluralist democracy and an imperative of social justice. It further states that "gender equality means an equal visibility, empowerment, responsibility and participation of both women and men in all spheres of public and private life" and requires concerted efforts to combat sexism and gender stereotypes. These ideas are operationalized

[29] Declaration on Equality of Women and Men (Committee of Ministers, 16 November 1988); Declaration on Equality between Women and Men as a Fundamental Criterion of Democracy (4th European Ministerial Conference on equality between women and men, Istanbul, 13-14 November 1997, Gender Equality: A Core Issue in Changing Societies (Declaration and programme of Action adopted by the 5th European Ministerial Conference on Equality between women and men (Skopje, 22-23 January 2003) and Declaration: Making gender equality a reality (119th Session of the Committee of Ministers, Madrid, 12 May 2009).

and made more specific through PACE Resolutions[30], numerous recommendations by the CoE Committee of Ministers, and gender equality programmes and strategies[31].

All these documents are important, not only to provide a framework for promoting gender equality and women's empowerment, but to advocate gender mainstreaming and demonstrate how the gender component can be integrated into or the gender perspective be strengthened in all policies, strategies, programmes and other measures.

4.2 Gender Policies of the Government of Armenia

The Armenian Government has been taking certain steps to harmonize national policies with the gender equality principle and with international requirements in that field. Thus, the Constitution of the Republic of Armenia[32], with the amendments adopted in 2015, has several articles on gender and non-discrimination. RoA Gender Policy Concept Paper reflects the latest international approaches to gender equality implementation based on the principle of equal rights and equal opportunities and lays the groundwork for mainstreaming gender into legislative practices and into the overall context of public life and State policies, the Law of the Republic of Armenia on provision of equal rights and equal opportunities for women and men regulates the issue of ensuring equal rights and equal opportunities to women and men in the fields of politics, public administration, labour and employment, entrepreneurship, health care, education, etc. The Electoral Code, effective since June 2016, enhances women's political representation, setting a progressive quota for women in elective bodies and applying a rotation mechanism to ensure female representation continuity. The Action Plan "On Promoting Gender Balance among Candidates for Judges" has yielded noticeable results in increasing women's participation in the judiciary.

And the Strategy and Action Plan for Gender Policy Implementation in the Republic of Armenia 2019-202324 with its 5 priority areas are the documents derived from the international commitments and setting out the priority directions of gender policy. However, even these policies and strategies are not enough to regulate all spheres of life and ensure the establishment of genuine gender equality in Armenia.

4.3 Sectorial Policies related to the Agriculture

The main document establishing government objectives, priorities and strategy for the development of agriculture, agro food production and related businesses is the Strategy of the Main Directions Ensuring Economic Development in Agricultural Sector of the Republic of Armenia for 2020-2030. The Strategy outlines the key priorities of the agricultural policy of the Republic of Armenia, defines the scope of priority issues, as well as the Action Plan for the implementation of the Strategy for 2020- 2022, which, in its turn, is aimed at increasing agricultural production, developing of rural areas and increasing Armenia's competitiveness in the global economy. According to the Strategy of the Main Directions Ensuring Economic Development in Agricultural Sector of the Republic of Armenia for 2020-2030 (The Strategy), the vision for the next ten

[30] Such as, e.g., PACE Resolution 1489 (2006). Mechanisms to ensure women's participation in decision making and PACE Resolution 1615 (2008). Empowering women in a modern, multicultural society.
[31] The current ones are the CoE Gender Equality Strategy for the Period 2014-2017 and the CoE Transversal Programme on Gender Equality (since 2012).
[32] RA Constitution (amended in 2015), Articles 28, 29, 30, 86, 87;

years is to have sustainable, innovative, high value-added agriculture in a harmony with the environment, ensuring care of natural resources, producing organic products and ensuring the well-being of the people living in the village. It includes the framework and major priorities and measures for the development of the area, such as increase agriculture competitiveness and enhance efficiency; ensure food safety; improve food security and nutrition, develop local markets and increase export possibilities. develop institutional and human capacity in agriculture, support sustainable rural development, and promote digital agriculture and technology innovation. Although the Strategy covers a broad range of issues relevant to the development of agricultural economy, and even states that "is based on seven principles and aims at inclusive growth, gender equality, as well as institutional sustainability" there is not any gender sensitive approach, measure, action or even indicator envisioned in the strategy and also its action plan. Thus, the political will expressed in the development of the strategy to be based on gender equality principles has not been transformed into political and state commitment to take concrete steps.

Another two important strategies in the field are: Regional Development Strategy of the Republic of Armenia for 2016-2025 and the Marzes Development Strategies for 2017-2025. Both strategies are gender blind as they do not recognize the existence of different sexes and do not propose any specific action to tackle gender inequalities. In the field of small and medium enterprise (SME) development the RA Law on State Support to Small and Medium Entrepreneurship (2000) should be mentioned. It established certain criteria and standards for SME entities, outlined main directions and principles of State policy of support to SME as well as the regulatory framework for the relations in the sector. Unfortunately, it also does not introduce or mandate a policy that would provide temporary special measures to reduce and compensate for the past and still existing gender-based inequality in SME.

Moreover, the general document overarching and laying the basis for all the above-mentioned laws and strategies - Armenia Development Strategy for 2014-2025, mentions women only within the framework of the actions envisioned for mothers with children and pregnant. Thus the existing legal framework is not adequately responding to the existing situation and does not provide any guidance and support to improve it.

5. Gender Policy of the Adaptation Fund and EPIU

5.1 Adaptation Fund Gender Policy

The Adaptation Fund places a strong emphasis on the integration of gender considerations. The Fund ensures that the projects and programs it supports offer equal opportunities to women and men, irrespective of gender, enabling them to enhance their resilience, address unique vulnerabilities, and better adapt to the impacts of climate change and related challenges.

The Fund's gender policy, which underwent revision in 2021, encompasses a dual mandate within its approach. Firstly, it involves analyzing and addressing gender-specific impacts and risks to ensure that projects do not inadvertently perpetuate harm. Secondly, it actively seeks opportunities, incorporating a gender perspective to proactively bridge existing gender disparities, thereby promoting equitable outcomes. These requirements are integral throughout the various phases of the project cycle,

including the pre-project stage (conceptual), full proposal stage, project performance reporting stage, mid-term review stage, completion report/final evaluation report stage, and knowledge sharing and learning stage.

The Fund's gender equality policy is underpinned by a set of fundamental guiding principles:

- **Commitment** to upholding women's human rights and contributing to gender equality and the empowerment of women and girls. This commitment extends across all internal and external processes in alignment with international human rights instruments, international law, and relevant national regulations.
- **Comprehensiveness of scope and coverage** across all adaptation activities remains a priority for the Fund, irrespective of the project or program's scale or focus. This commitment applies uniformly to initiatives executed by multilateral, regional, or national agencies, as well as accredited executing entities affiliated with the Fund.
- **Accountability** for gender mainstreaming efforts and the outcomes of adaptation initiatives. This accountability is upheld through regular, transparent, and comprehensive annual reporting, tailored to the specific needs of each project or program.
- Emphasizing the significance of expertise in gender-related matters, the Fund places importance on incorporating relevant **skills**. This involves ensuring a gender-balanced composition and appointment of its members, thereby promoting diverse perspectives and competencies.
- **Allocation of resources** is strategically directed towards concrete adaptation projects and programs that actively contribute to gender equality and the empowerment of women and girls. This allocation reinforces the Fund's dedication to fostering equitable outcomes across its initiatives.
- **Knowledge management and communication**, the Fund is committed to accelerating the learning process concerning the implementation of gender-responsive adaptation actions. This commitment extends to addressing existing gaps in knowledge, data, and institutional capacities, reinforcing the Fund's role as a leader in advancing gender-responsive practices within the field of climate change adaptation.

5.2 EPIU Gender Policy

EPIU's approaches to gender policy are embedded into its Operational Manual and define the main objectives of the Policy. The first objective is to ensure equality in EPIU programming, with a commitment to treat women and men on an equal footing. Secondly, the policy aims to provide equal opportunities to women and men, allowing both to enhance their resilience, address distinct vulnerabilities, and improve their capabilities. The third objective is to identify and mitigate potential project/program risks for women and men through specific actions. Additionally, the policy strives to contribute to addressing knowledge and data gaps related to gender-related vulnerabilities. It also seeks to expedite the learning process concerning effective gender-equal measures and strategies. Lastly, the policy underscores the importance of actively engaging and consulting with affected women and men. This involves

considering their experiences, capabilities, and insights into the situation and processes.

As an accredited entity to both the Green Climate Fund and the Adaptation Fund, EPIU diligently incorporates the requirements and standards of these organizations into every aspect of its operations. This commitment extends across programming, project implementation, thorough monitoring and evaluation, as well as comprehensive impact assessments. By doing so, EPIU upholds the highest standards of environmental and climate responsibility, ensuring that its initiatives align seamlessly with the objectives and expectations set by these climate-focused entities.

6. Overall Situation with Gender Equality in Armenia

6.1 Social and Cultural Barriers

The prevailing sentiment among the adult population in Armenia emphasizes the importance of preserving cultural traditions. According to the UNDP countrywide Social Cohesion survey, a significant segment of Armenian society associates men with the role of preserving a stable source of income to support their families. The survey's findings indicate that nearly 85 percent of respondents believe that the primary breadwinner in a family should typically be male. However, despite these perceptions, the practical reality is that women continue to actively participate in economic activities that contribute to household well-being.

An analysis of the gender landscape in Armenia reveals that this persistent division of labor and responsibilities serves as the foundation for economic gender disparities. These societal norms predominantly link women to family-related duties and obligations, constraining their opportunities for independent and autonomous employment. In sum, these gender stereotypes have an adverse impact on women's involvement in political spheres, business endeavors, and their access to formal employment opportunities.

6.2 Women's ownership and possession of property, employment and control over the use of their private earnings

Based on the primary findings of the Agricultural Census conducted in Armenia in 2014, it was observed that approximately 74.5 percent of family-based farms were headed by males, while only about 25.5 percent were led by females. A noteworthy study from 2016 revealed that the poverty rate in households headed by women was higher compared to those led by men. Even in cases of joint ownership, rural women had limited autonomy in making decisions about assets. The study indicated that a mere 0.1 percent of women owned businesses independently, and 4.4 percent held joint ownership. Only 37.7 percent of women were actively engaged in income-generating activities, and a significant 91.6 percent lacked savings in the bank.

Female-headed households typically face greater vulnerability due to challenges such as limited access to agricultural equipment, difficulties in acquiring land plots and accessing available irrigation, and constraints in obtaining financial resources to maintain their assets. These circumstances pose significant obstacles to advancing women's economic empowerment and represent a pivotal challenge for Armenian

women.

6.3 Statistical Snapshot

As of 1 January 2022, the population of Armenia was 2,791,000 people, of which 63.8 per cent live in urban areas and 36.2 per cent live in rural areas. At the same time, 56.8 per cent of the urban population live in the capital city of Yerevan[33]. As of 1 January 2022, 47.5 per cent of the population of the country were men, and 52.5 per cent were women. In 2022, the value produced in the agricultural, hunting, forestry and fishing sector in Armenia was 15.9 per cent of GDP.

In 2022, agriculture employed 338,100 people, which accounted for 33.6 per cent of the country's total employment and 69.7 per cent of rural area employment. At the same time, in the agricultural sector, 161,700 or 52 per cent of the employed were men, and 176,300 or 48 per cent were women[34]. According to the main findings of the Agricultural Census implemented in Armenia in 2014, 236,600 or 74.5 per cent of family-based farms are male-headed, and 80,800 or 25.5 per cent are female-headed.

In 2016, the poverty rate in female-headed households was higher than in male-headed households (33.4 per cent versus 28.0 per cent, respectively). Extremely poor male-headed households accounted for 1.2 per cent, with female-headed households accounting for 3.4 per cent. In 2016, female-headed households in Armenia accounted for 30 per cent of the poor population and 27 per cent of the total population. Female-headed households are usually more vulnerable due to the lack of agricultural equipment, difficulty accessing land plots and available irrigation, and difficulty accessing financial resources.

Although the difference in poverty rates between rural and urban communities was not large in 2016, the share of poor people in rural communities (30.4 per cent) was higher than in urban communities (28.8 per cent). However, the level of extremely poor people in urban communities (2 per cent) was higher than in rural communities (1.4 per cent). The risk factors for increasing the poverty rate include geographical location of the community; land availability and fertility of soil; access to infrastructure (irrigation, roads and transportation, markets); and access to financial resources.

6.4 Analysis from desk research

The share of agriculture in men's employment structure is 24%, and in women's employment structure – 26%3 . In fact, it is women who create the larger portion of agricultural produce, and they are the main guarantors for food supply and survival of households in rural areas. At the same time, women's employment in the agricultural sector is primarily non-formal by its nature, and consequently women are representatives of the lowest-paid and socially unprotected segment. According to the data of a comprehensive agricultural registry, women head 25% of rural households in Armenia.

Women-headed households are more vulnerable due to the absence of the second workers, lack of agricultural machinery, difficult access to land plots, and problems

[33] National Statistical Committee of the Republic of Armenia. (2017). Socio-Economic Situation of the Republic of Armenia
[34] Women and Man in Armenia, 2022

related to irrigation and financial means. Women's equal access to and control over economic and financial resources is crucial for the achievement of gender equality and empowerment of women, and more importantly for equitable and sustainable agriculture and economic growth.

Gender equality in the distribution of economic and financial resources has positive multiplier effects for a range of key development goals, including poverty reduction and the welfare of children. Long-standing inequalities in the gender distribution of economic and financial resources, all over the world, have placed women at a disadvantage relative to men in their capability to participate in, contribute to and benefit from broader processes of development. The Economic resources used in the production of goods and services are mainly categorized as land and other natural resources, labour and financial resources, as well as entrepreneurship. Due to the gender inequality and discrimination, women have less access and control over resources.

Armenian law gives equal property rights to both women and men, but in practice women rarely exercise these rights due to the following reasons: **Registration practices**: After the collapse of the Soviet Union the land ownership was awarded to the person who was identified as the "head of the household". Although this could legally be a woman or a man, the majority of land was registered in the name of men as "representatives" of the whole household; **Inheritance practices**: Parents usually provide the son with the house, as inheritance, while it is expected that the daughter gets married and leaves the parents' house. Within the practice of patrilocal marriage, women go to live with their husbands' families, rarely claim land from their families of origin, and they are not usually recognized as owners of the land of their new stepfamilies; **Access to resources**: Women are less able to purchase property than men, due to their limited access to, and control over, financial resources either through income or credit. Limited knowledge by women and whole communities about women's ownership rights, including over land. This includes limited knowledge about rights and of the consequences of not having land registered also in their name.

Another factor impeding women active and meaningful participation in the farming and agriculture is connected to the lack of professional education among them. According to the official statistics in Armenia, women comprised 70% of the people with higher/ university education and 53% of those accomplished post-graduate studies, however the situation is different in education in different areas. The correlation between the area of education and sex of those involved could be easily noticed even starting the vocational education where the number of girls is comparatively higher in the areas of journalism and information sciences (98.5%) as well as health care (74.4%) and on the low level in the area of agriculture (25.3%) This trend continues in higher/university education showing that females make only 20.3% of agricultural, 22.9 % of veterinary and 10.1% of forestry students.

The implication of this situation is reflected in 5 main points:

1) **lack of narrow specialists** - agronomist, veterinarians, machine operators and others to support the agricultural developments in rural Armenia (as due to high rates of migration mostly women stayed in the rural communities).

2) **lack of professional knowledge** among those working at their family plots and private farms.
3) **lower opportunities for women** to be employed and be provided with decent work conditions,
4) **lower income**, which creates higher economic dependency rates among women,
5) **lower access to credit and entrepreneurship**, alongside the stereotypical attitude by society.

The latter is also explained by the fact of limited solvency of women resulted in overage gender pay gap existing in Armenia (35.5%) and 22% in Agriculture.

Furthermore, women are overrepresented in unpaid work in agriculture, especially in family farming. ARMSTAT data (2021c) demonstrate that many of these women may be registered under the category "Other" within the self-employed population. They can also be registered as a member of the "inactive population" under the category of "housekeepers", who account for almost 21% of all women of working age in Armenia. There are 41 times more women in this category than there are men (ARMSTAT, 2022c).

7. Gender issues in the Project's targeted areas

Armenian law provides equal property rights to women and men, but in practice women are in more unequal situation due to the following reasons/peculiarities:

1. Since independence the Government of Armenia privatized land in 1991 and 1992 by dividing it among households. Land ownership was awarded to the person who was identified as the "head of the household". Although in the context of Armenia, both women and men play equally important role as breadwinners, the majority of land was registered on the name of men as "household head by default". Women received land titles only in case of absence of a male head of the family. As a result of this situation only 1/3 of women headed households have land property in beneficiary provinces.
2. Limited knowledge by women and whole communities about women's ownership rights over land contributed to the problem. This includes limited knowledge about rights and of the consequences of not having land registered also in their name.
3. Another reason is "inheritance practices" widely accepted in Armenia. - parents usually grant the house, vehicle and other property to sons, and daughters are having nothing or less from their parents and almost nothing from the husbands' families;
4. Women have limited access and control over financial resources that's why are less able to purchase land and other property than men;
5. Lack of control over their own earnings - only 34 in urban and 11 percent of women in rural areas decide about their earnings.

Households headed by men are more likely to keep livestock, and to have a larger number of animals across all categories, than female-headed households. When female headed households have livestock, they tend to have cattle and poultry, possibly because dairy farming is traditionally "female" work or because selling extra

milk and eggs is a relatively simple way to supplement the household income. Men have greater involvement in grazing, feed production and purchasing and sales of livestock.

Limited access to productive resources is a serious constraint to rural women's agricultural activity. For instance, rural women have little or no direct access to farm equipment such as tractors, combines and harvesters. Traditionally, these are operated only by men. Even female heads of household do not personally use these resources, they hire in assistance or ask male relatives to help.

Markets accessibility depends greatly on the mobility of the producer or the accessibility of the community. Cars and machinery are rarely owned by women. In rural areas, in more than 95 percent of car and machinery owners are men, as are 100% of agricultural machinery operators in the marzes. Female car owners and female drivers are increasingly prevalent in urban areas, especially in Yerevan, but continue to be rare in rural areas.

Lack of access to transportation impedes women's income earning opportunities, through the sale of their agriculture and other production. Dairy products are mostly sold at place rather than in other rural or urban markets. In the absence of dairy products collection systems, there is a need to take the products directly to the urban market. As a result, women, and mostly lonely women and even women heads of households have no opportunity to do that due to stereotypical practices and lack of transportation.

At the same time the biggest challenge for women participation in the agriculture and pasture management is the lack of awareness as well as low level of public and particularly women participation in issue related decision-making. In provinces women seem to be more active in decision-making in the following circumstances: (a) when women have to assume responsibility as head of the household, (b) when women are employed or are engaged in public activities, and as a result are more independent; (c) when there is a participatory setting in the culture of decision-making in an individual family.

Meantime, decision making in the community level depends on the following three aspects, and women face discrimination in all. These areas are as follows:

1. **Cultural norms and stereotypes which affect women's participation in the decision making:** Women are not generally prominent in local community-level decision making, and are very rarely elected as members of community councils. The Gender assessment conducted by USAID in 2010 pointed out that while "there is evidence that societal views of the "appropriate" roles for men and women are quite rigid and influenced by patriarchal traditions", there is significant variation within Armenia, and some marzes appear to be more socially conservative than others in relation to gender roles and women's status. Nevertheless, the perception of men as the main decision-makers and leaders in society is prevalent and influences women's access to political positions and participation in public life overall. The influence of traditional roles affects women's own confidence and perception of what is appropriate.

2. **Knowledge:** on management and productive farming is depending on the level of education and/or experiences, accessibility to consultancies; on average, women enjoy less education than men; consultancies focus in general on men. There is no Government policy in place to promote women education in management and entrepreneurship. No efforts have been made to offer training, retraining or vocational education to women to equip them with adequate skills and competence and to match those with the existing challenges and opportunities. The Government policies to promote small and medium businesses have yet to become gender-sensitive.
3. **Access to financial resources, and financial independence**. Given the more limited range of employment and income opportunities for women, particularly in rural areas, and continuing gender inequality in income and salary levels. The overall level of professional qualification of rural women is low in comparison with urban women. Veterinarians and agronomists are mostly men. Apart from the agricultural sector, rural women are also employed in educational and in health care institutions - mainly in middle-level posts, yet in low paid sectors. The main causes of gender inequality in rural areas could be considered cultural norms and stereotypes which affect women's participation in the labour market. In fact, some husbands do not allow their wives to work, even if a household could use the additional income. Women face more difficulties in receiving a loan and in having access to the family budget. Sometimes women have no own funds even to register her candidacy for the local elections, which means that they should check their availability with other members of the family.

8. Recommendations

It has been observed that women and young individuals, who hold significant influence in local socio-economic activities within the project areas, have limited participation in the decision-making process. They represent a crucial segment of the workforce in family farms and contribute significantly to household income. Despite their pivotal role in resource production, their access to decision-making forums and critical resources such as financing, equipment, and employment opportunities remains a challenge in nearly all project areas. Consequently, within the project framework, to enhance and bolster the opportunities available to women and young individuals, the following recommendations are proposed:

- The analysis of the existing gender inequalities, men labor migration, as well as demographic situation in the rural areas showed that it is highly recommended to involve women, into the process of the project implementation. Women's participation in the project will be twofold: 1) Women will be considered as agents and main advocates for behavior and attitude change in the families, as well as on community and at the national level. This function inter alia could be paralleled with monitoring activities implemented by them; and 2) Women will be involved in the project as active participants: staff and/or providers of the planting material through tree nurseries and farming cooperatives organized and administered by them. Both functions shall be based on their participation in educational and awareness raining activities.
- Women shall be also involved as project beneficiaries - participating in capacity building activities and receiving vocational education, as well as will be among recipients of the equipment and other type of TA support. While the risks of

escalating the level of violence against women (VAW) due to the project implementation are assessed as low, to avoid any negative implications, caused by the involvement of women in the project activities, the project should dedicate specific attention to a profound awareness raising work with communities and families, especially men. Media resources will be also used for this purpose and profound awareness raising on VAW will be integrated into the overall community level work.

- Considering the demographic structure of rural communities and the vulnerability faced particularly by elderly and young female Armenians, the project shall pay special attention to the involvement of lonely elderly, especially women as beneficiaries.
- In this context, the project implementation shall ensure periodic collection of sex and age disaggregated data and analysis in the area (e.g. study in Gender-responsive Action, to identify gender issues in energy efficiency in Armenia), as well as use of gender expertise to further develop gender balanced approaches and to adjust the proposed Gender action plan.
- The project team shall follow the UN principles and standards, as well as AF requirements that are outlined in the Environmental and Social Management Guidelines. In particular, the Environmental and Social Standard 8 (ESS 8) on Gender Equality, which has an objective to: - "Provide equal access to and control over productive resources, services and markets; - Strengthen women and men's participation in decision-making in rural institutions; - Ensure that all stakeholders benefit equally from development interventions and that inequality is not reinforced or perpetuated".
- The project established a minimum target at 40 percent of all beneficiaries of the project to be women, which is above UN recommended quota (30%) to ensure critical mass of women's representation. However, this represents just a target, and not a goal. The goal should be 50 percent or even more depending on demographic representation in the project area. Also, actual participation can be higher, and the project team will apply all possible efforts to achieve that.
- The project shall recruit a national gender expert who will work in close collaboration with the project team. Gender expert will be providing support to the project team in mainstreaming gender concerns into the project activities and provide support in gender-specific activities.
- The guidelines produced within the framework of the project shall be based on gender analysis and explicitly address gender considerations and constrains, recognizing multiple vulnerabilities of project participants, beneficiaries and community members, as women, youth and the elderly.

Based on this assessment, a Gender and Social Inclusion Action Plan (GAP) was prepared to implement the gender strategy and to ensure inclusion of disadvantaged groups (poor families, elderly, single-headed households and youth). The GAP is in line with the overall project implementation plan and timeline, thus, all activities are incorporated into the relevant components of the project.

9. Gender Action Plan

Impact statement: Reduced climate risk vulnerability and increased adaptive capacities of vulnerable population in 6 local communities (10 settlements) living adjacent to the "Khosrov Forest", "Dilijan" and "Lake Sevan" National Parks (adjacent to the Ararat, Gegharkunik and marzes) through promoting sustainable and climate-resilient agricultural practices in degraded areas and buffer zones, benefiting **20,000 direct beneficiaries** (and 90,000 indirect beneficiaries) of which minimum 40% are women.				
Outcome 1. - Community based, climate smart agricultural practices are implemented in degraded areas to reduce climate risks vulnerability of production systems and sustain protected areas.				
Activities	**Indicators**	**Target**	**Timeline**	**Monitoring costs**
Activity under Output 1.1 Rehabilitation of irrigation water supply systems in 6 new municipalities to increase water use efficiency;	➢ Number/percentage of female-headed households benefited;	➢ Minimum 30% in total number of households;	Years – 1-3	Included in activity costs Total activity cost: 748,000 USD
Activity under Output 1.2 Establishing of orchards with drip irrigation system and anti-hail nets in 6 communities (12 ha);	➢ N of beneficiary farmers disaggregated by gender;	➢ Minimum 40% of the beneficiary farmers;	Years – 2-4	Included in activity costs Total activity cost: 485,000 USD
Activity under Output 1.3 Rehabilitation of the existing field tracks to remote pastures degraded lands (15% of field tracks rehabilitated 20 km rehabilitated 25 culverts installed);	➢ Number/percentage of female-headed households benefited;	➢ Minimum 30% in total number of households;	Years – 2-3	Included in activity costs Total activity cost: 165,000 USD
Activity under Output 1.4 Creating sowing areas of perennial plants to reduce rangeland degradation (30	➢ Number/percentage of female-headed households benefited;	➢ Minimum 30% in total number of households;	Years – 1-3	Included in activity costs Total activity cost:

ha of perennial sowing area established);				78,000 USD
Activity under Output 1.5 Rehabilitation and improvement of adaptive capacity of the community pastures and hay meadows (500 ha hay meadows, pastures and arable lands rehabilitated);	➢ Number/percentage of female-headed households benefited;	➢ Minimum 30% in total number of households;	Years – 1-3	Included in activity costs Total activity cost: 268,000 USD
Activity under Output 1.6 Construction of the livestock watering points are constructed (5 watering points constructed);	➢ Number/percentage of female-headed households benefited;	➢ Minimum 30% in total number of households;	Years – 1-2	Included in activity costs Total activity cost: 69,000 USD
Activity under Output 1.7 Architectural and design drawings and estimates;	-	-	-	-
Activity under Output 1.8 Capacity building for improved grazing management in targeted municipalities	➢ Number/percentage of female-headed households benefited;	➢ Minimum 30% in total number of households;	Years – 1-2	Included in activity costs Total activity cost: 40,000 USD
Outcome 2. - Value chains for climate smart agriculture are strengthened and climate smart technologies are accessible for vulnerable rural communities.				
Activity under Output 2.1 Introduction of the smart agricultural practices in 6 municipalities, establishing 3 ha berry orchards with drip irrigation system	➢ N of beneficiary farmers disaggregated by gender;	➢ Minimum 40% of the beneficiary farmers;	Years – 3	Included in activity costs Total activity cost: 75,000 USD

Activity under Output 2.2 Construction of the non-heated, lightweight greenhouses in priority community areas (3000m2 of greenhouses constructed/40 beneficiaries)	➢ N of beneficiary farmers disaggregated by gender;	➢ Minimum 40% of the beneficiary farmers;	Years – 2-3	Included in activity costs Total activity cost: 175,000 USD
Activity under Output 2.3 Installation of the solar dryers are installed in priority community areas (40 solar dryers constructed 40 beneficiaries)	➢ N of beneficiary farmers disaggregated by gender;	➢ Minimum 40% of the beneficiary farmers;	Years – 3-4	Included in activity costs Total activity cost: 124,352 USD
Activity under Output 2.4 Formulation of the community management and business plans for climate smart agricultural value chains (5 business plans formulated)	➢ Number/percentage of female-headed households benefited;	➢ Minimum 30% in total number of households;	Years – 2	Included in activity costs Total activity cost: 65,000 USD
Activity under Output 2.5 Piloting Agrivoltaic systems (10 installations with 30 KW of installed capacity each)	➢ N of beneficiary farmers disaggregated by gender;	➢ Minimum 40% of the beneficiary farmers;	Years – 2-3	Included in activity costs Total activity cost: 405,000 USD
Activity under Output 2.6 Construction of the demonstration sites for sustainable land management practices in each municipality;	➢ N of beneficiary farmers disaggregated by gender;	➢ Minimum 40% of the beneficiary farmers;	Years – 2	Included in activity costs Total activity cost: 35,000 USD

Activity under Output 2.7 Piloting of the 2 agro-acceleration hubs to enhance integration with existing supply chains;	➢ N of beneficiary farmers disaggregated by gender;	➢ Minimum 50% out of 60 beneficiaries are women;	Years – 1-4	Included in activity costs Total activity cost: 250,000 USD
Activity under Output 2.8 Piloting of the 2 model agrotourism facilities in every community;	➢ N of beneficiary farmers disaggregated by gender;	➢ Minimum 40% of the beneficiary farmers;	Years – 1-4	Included in activity costs Total activity cost: 150,000 USD
Activity under Output 2.9 Piloting of the new varieties of dry and heat resistant crops;	➢ N of beneficiary farmers disaggregated by gender;	➢ Minimum 50% out of 100 beneficiaries piloting new crops are women;	Years – 2-4	Included in activity costs Total activity cost: 45,000 USD
Outcome 3. - Awareness, planning, monitoring and decision-making capacity on climate smart agriculture production methods and LDN has increased in target communities.				
Activity under Output 3.1 Provision of the farmer field schools and extension services to share best practices of climate smart agriculture and LDN for the targeted communities (200 beneficiaries)	➢ N of beneficiaries disaggregated by gender;	➢ Minimum 40% out of 400 beneficiaries that are aware of climate change impacts and appropriate responses to threats are women;	Years – 4	Included in activity costs Total activity cost: 40,000 USD
Activity under Output 3.2 Formulation and dissemination of the best practices examples and training material on natural and agricultural ecosystems' adaptation under the	➢ N of community members trained disaggregated by gender;	➢ Minimum 50% out of 400 community members benefited from the trainings are women;	Years – 3	Included in activity costs Total activity cost: 40,000 USD

conditions of climate change (4 training programs and thematic topics);				
Activity under Output 3.3 Conducting of the community-based adaptation planning for target communities (4 community-based adaptation plans formulated)	-	-	-	-
Activity under Output 3.4 Formulation of the strategies for sustaining climate smart agriculture and LDN in target areas (4 community-based strategies adaptation plans formulated);	-	-	-	-
Activity under Output 3.5 Advancing capacities of local stakeholders, including municipalities, CSOs and managers of protected areas (women, youth, environmental);	➢ N of women, youth and environmental CSOs benefited from capacity building;	➢ 10 women, youth and environmental CSOs benefited from capacity building;	Years – 3-4	Included in activity costs Total activity cost: 50,000 USD