ADAPTATION FUND

Strengthening land based adaptation capacity in communities adjacent to protected areas in Armenia

Monitoring & Evaluation Report

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Բովանդակություն

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1. Introduction

1.1 Project summary

Due to its climate and pronounced location in the South Caucasus with a mountainous landscape, fragile ecosystems and a vulnerable, agriculture-based economy, the compounding effects of climate change and land degradation particularly affect livelihoods and economies of Armenia and its approximately 3 million inhabitants. The summer season has become dryer and the number of extreme events, like hailstorms, has increased. Different climate change scenarios predict that this trend will continue to increase and affect the marginal production areas. Crop and livestock production has already decreased in some areas, and if no additional climate adaptation measures were taken, will continue to decrease.

The existing capacity to adapt to a changing climate and its increasing impacts on the rural communities and their production systems is low, calling for concerted efforts to address the compounding challenges of land degradation and climate change impacts on rural livelihoods.[1]

Potential climate change impacts on different economic sectors. Climate change is likely to impact different sectors notably the water, agriculture, forestry and livestock, health sector in numerous ways, with substantial impacts on the different sectors of Armenia's economy. Without implementing adaptation measures as part of the core development policy, strategies and plans, these consequences are likely to be significantly exacerbated over time. The potential impacts of the main climate change effects and drivers are discussed below.[2]

- ***Agriculture:*** Climate change may lead to a shift of agro-climatic zones, notably in the mountainous areas as well as agricultural land, pasture, and grassland degradation. It is expected that that the climate impacts on precipitation and temperature (increased evapotranspiration) have impacts in increased soil salinity and reduction in crop and forage yields. The increased frost risk may particularly have impacts on horticulture and tree crop production.

- ***Forestry:*** In case of projected climate change scenarios the lower mountain belt forests (550-1200m) will be most vulnerable, where the conditions for forest growth will be sharply

[1] REQUEST FOR PROJECT/PROGRAMME FUNDING FROM THE ADAPTATION FUND, page 2 / Ծրագրի ֆինանսավորման հայտ Հարմարվողականության Հիմնադրամին էջ 2

[2] See at Request for Project/Programme Funding from The Adaptation Fund, page 11 Ծրագրի ֆինանսավորման հայտ Հարմարվողականության Հիմնադրամին էջ 11

worsened. According to expert assessments (without adaptation measures), about 17,000 ha forests will disappear. Based on the biological peculiarities of leaf-eating insects, it can be assumed that the massive development of the area will be expanded by more than 2-fold and will reach 70-75000ha. Increase in forest fire intensity is also expected.

- ***Natural ecosystems:*** Boundaries of landscape zones are predicted to shift upward mountainous profile 200-300m. The surface of the desert-semi-desert belt will expand by 33%, and the surface of the steppe zone by 4%. The surface of subalpine belt will be reduced by 21%, while the alpine belt by 22%. In case of increasing temperature and falling precipitation projections, desertification processes are expected to accelerate. The total area of the pastures and their yield will be reduced by 4-10%, including the most valuable and yielding pasture areas of the subalpine and alpine zones by 19-22%. In this regard, it is expected that 30% and cattle breeding -by 28-33% will reduce the livestock.

- ***Health***: Higher temperatures and the penetration of hot currents can contribute to the deterioration of people's health, especially among elderly and children. Because of the direct impact of climate change (heat waves, thermal islands), the rate of increase in cardiovascular diseases will rise. Indirect effects will be expressed by the increase in epidemic and seasonal infections, as well as by the increase in the frequency and spread of diseases associated with inadequate supply of clean water and food safety. Since 1994 a trend of frequent imported malaria cases is observed. In Armenia from 1998-2001 due to high summer temperatures the largest number of malaria cases was recorded. Raising temperatures and prolonging of warm and hot periods will also contribute to the spread and increase in intestinal infections.

Climate change effects	**Potential Impacts**
– Overall increased temperatures – Reduction of negative temperatures in mountainous areas. – Higher peak temperatures in summer –	– Increase in evapotranspiration. – Earlier snow melts. – Increased salinization of ground water resources. – Increased agricultural water stress in summer season with increased demands for irrigation. – Decreased crop productivity (crop yields), particularly heat intolerant crops (perennial, annual crops)

	– Decreased of forage production due to the early arrival of spring and increase in temperatures. – Decreased livestock productivity due to impacts on heat intolerant livestock species. – Higher energy consumption for air conditioning, cooling, pumping of water, etc. – Decreased forest cover and vegetation shift to dryer steppe type ecosystems. – Stressed aquatic ecosystems. – Increased health risks due to heat waves and air pollution; and increased malaria risks due to higher temperatures.
– Decrease in precipitation during summer – Dryer and warmer summers	– Increased agricultural water stress with increased demands for irrigation, reduced water availability. – Reduced growing season and decreased agricultural productivity, impacts on drought intolerant crops. – Decreased of forage production due to limited water availability and reduced growing season. – Increased water demand for livestock. – Impacts on aquatic ecosystems and shift of ecosystems. – Decreased forest cover and shift of forest ecosystems
– Potentially marginal increase in precipitation in mountainous regions	– Potential increase in run-off and increased flood risk – Changing patterns in mountainous ecosystems
More extreme weather and climate events – droughts – floods – hailstorms – frost event	– Increase of frost events due to an earlier start of the crop growing season and potential sharp falls in temperature after the start of the growing season (e.g., April). – Increased number of days with heavy precipitation and hail due to the higher frequency of penetration of high cyclones generating heavy rain and hail clouds. – Increased peak run-offs in rivers leading – Increased erosion and land slide risk.

1.2 *Priority areas for climate change adaptation*

Armenia is affected by the compounding effect of climate change and land degradation and its impact on livelihoods and local economies. The project focuses on areas adjacent to two remaining and protected forest areas: Khosrov Forest State Reserve (communities adjacent to Khosrov Forest State Reserve - Urtsadzor community (3320 inhabitants), Lanjanist (175 inhabitants) and Shaghap (1030 inhabitants)) in the Ararat Marz in southwestern Armenia (southeast of the capital Yerevan) and Dilijan National Park in Tavush Marz in north-eastern Armenia. While the two protected sites are protected natural ecosystems, the adjacent communities are facing high rates of poverty and resource constraint livelihoods with limited capabilities to address land degradation, sustainably manage biodiversity of the region and adapt the production systems and communities to the impacts of climate change.

More specifically the project will target the Urtsadzor community located on the foothills of the western part of the Ararat valley close to Khosrov Forest State Reserve and Dilijan, Margahovit and Fioletovo communities located in the vicinity of the Dilijan National Park.

1.2.1 Project objective and outcomes [3]

The objective of the project is to reduce the climate risk vulnerability of local communities living adjacent to the "Khosrov Forest" and "Dilijan" National Park by strengthening the adaptive capacity of the agricultural sector and reinforcing their institutional and planning capacity for climate change adaptation.

The project has three expected outcomes:

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.

Outcome 2: Value chains for climate smart agriculture are strengthened and climate smart technologies are accessible for vulnerable rural communities, including equally for women and men.

Outcome 3: Awareness, planning, monitoring and decision-making capacity on climate smart agriculture production methods and land degradation neutrality has increased in target communities.

Project / Programme Components and Financing[4]

[3] See at Request for Project/Programme Funding from The Adaptation Fund, page 20
[4] See at Request for Project/Programme Funding from The Adaptation Fund, page 21

1.2.2 Project Components and financing

Project Components	Expected Outcomes	Expected concrete outputs	Amount (USD)
Component 1: Community based, climate smart agricultural practices in degraded areas and buffer zones	**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	**Output 1.1:** Irrigation water supply systems are rehabilitated increasing water use efficiency. **Output 1.2:** Water efficient drip irrigation systems are installed in selected community orchards; **Output 1.3**: Existing field tracks to remote pastures degraded lands are rehabilitated; **Output 1.4:** Sowing areas of perennial plants are created reducing rangeland degradation; **Output 1.5:** Community pastures and hay meadows are rehabilitated and improved their adaptive capacity; **Output 1.6** Livestock watering points are constructed; **Output 1.7**: Degraded slopes are rehabilitated by belt planting of perennial, drought resistant plants;	**1 733 183**
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, including equally for women and men.	**Output 2.1:** Implementation of "Climate smart agriculture" technologies **Output 2.2:** Non-heated, lightweight greenhouses are constructed in priority com-munity areas **Output 2.3:** Solar dryers are installed in priority community areas **Output 2.4:** Community management and business plans are formulate for climate smart agricultural value chains.	**342 397**

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 land degradation neutrality has increased in target communities.	**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. **Output 3.2** Best practices examples and training material on climate smart agriculture are formulated, disseminated and made accessible. **Output 3.3** Community based adaptation planning is conducted for target communities. **Output 3.4** Strategies for sustaining climate smart and gender-responsive agriculture and LDN in target areas have been formulated. **Output 3.5:** A monitoring system for land based adaptation measures and land degradation neutrality has been established for the target communities;	**200 000**
3. Total components			**2 275 580**
4. Project execution cost*			**34 130**
5. Total Project Cost			**2 309 710**
6. Project Cycle Management Fee charged by the Implementing Entity (if applicable)			**196 290**
Amount of Financing Requested			**2 506 000**

1.2.3 Projected Calendar: [5]

Milestones	Expected Dates
Start of Project/Programme Implementation	2019
Mid-term Review (if planned)	2020

[5] See at Request for Project/Programme Funding from The Adaptation Fund, page 22
Ծրագրի ֆինանսավորման հայտ Հարմարվողականության Հիմնադրամին էջ 32

Project/Programme Closing	2022
Terminal Evaluation	2023*

The total duration of the project is 3 years (36 months).

1.2.4 Շահառուները / Beneficiaries[6]

The target communities were selected in a participatory manner focusing on poor and vulnerable communities as well as women and women headed households. The beneficiaries of the project are amongst the most vulnerable population of the country: rural communities with low human development indicators, highly dependent on natural resources taking into account restrictions of protected areas. It's expected through the project to integrate appropriate considerations of climate change and variability into daily practices among beneficiaries. The project will particularly target:

- **Rural communities:** The livelihoods on livelihoods are highly dependent on climate, particularly for those communities that are considered the most vulnerable. Support to the development of agricultural value chains and energy saving technologies will help sustaining and improving income opportunities for local communities.
- **Small scale farmers:** The project will help improving their production systems using a low cost/organic/nontraditional approach that would contribute to increase their productivity, maintain their income and their resilience to climate change.
- **Women:** specifically, women-headed households will benefit from improvements on the supply of irrigation water, implementation of sustainable and organic measures for agricultural sectors.
- **Civil society organizations:** Civil society and community-based organizations, such as farmers' organizations and associations of local producers, women's groups and schools as well as local government administration will benefit from the project through capacity building support and training, as well as support to better plan, manage and monitor climate smart agricultural interventions.

The number of direct and indirect project beneficiaries is estimated as follows:

[6] See at Request for Project/Programme Funding from The Adaptation Fund, page 103
Ծրագրի ֆինանսավորման հայտ Հարմարվողականության Հիմնադրամին էջ 141
*Due to Coronavirus the project ending date was changed.
*Կորոնավիրուսի համաճարակով պայմանավորված՝ նախագծի ավարտման ժամկետները երկարաձգվել են

- Total number of beneficiaries (direct and indirect):[7] 16000 people (55% - women, 45%- men).
- Beneficiaries in communities adjacent to Khosrov Forest State Reserve: 4500 people (45% - women, 55%- men).
- Beneficiaries in communities adjacent to Dilijan National Park: 12500 people (53% - women, 47%- men).
- Beneficiaries benefitting from targeted capacity building: 300 people (60% - women, 40%- men).

Brief information about the project follows below:

Project Title	*Strengthening land based adaptation capacity in communities adjacent to protected areas in Armenia*
Starting Date – Ending Date	2019-2023*
Duration in years	5*
Target areas	Agricultural sector Social sector Economic sector
Goals of the project	– Increase water use efficiency – Increase soil organic carbon – Introduce and promote more heat and drought resistant pasture crops and climate smart livestock management – Improve fodder management – Improve agricultural micro-climate – Promote more drought and salinity tolerant crop/pasture varieties and establish seed banks – Promote information sharing, farmer field schools and the promotion of global best practices

[7] Request for project/programme funding from the adaptation fund, 56 paragraph

Expected Outcomes	**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. **Outcome 2:** Value chains for climate smart agriculture are strengthened and climate smart technologies are accessible for vulnerable rural communities, including equally for women and men. **Outcome 3:** Awareness, planning, monitoring, and decision-making capacity on climate smart agriculture production methods and LDN has increased in target communities.
Beneficiaries[8]	Beneficiaries in communities adjacent to Khosrov Forest State Reserve: 4500 people (45% - women, 55%- men). Beneficiaries in communities adjacent to Dilijan National Park: 12500 people (53% - women, 47%- men). Beneficiaries benefitting from targeted capacity building: 300 people (60% - women, 40%- men).
Total Project Cost	2.506.000$

2. Purpose of monitoring and evaluation plan

While implementing the monitoring program our team was guided exclusively by the principles of honesty and impartiality. During performing the monitoring program, it was a priority for us to perform the work efficiently and on time.

The main purpose of the monitoring plan is to study and evaluate the progress of the activities carried out in the period from September 2019 to December 30, 2021 within the framework of the program "Strengthening the Adaptation Capacities of Ecosystems and Communities Adjacent to Special Nature Protected Areas of the Republic of Armenia" (hereinafter referred to as the Program).

Monitoring implementation methodology

The studies were based on the reports and studies listed below, as well as the research and analysis done by our team:

- Project document, monitoring reports, analysis

[8] Request for project/programme funding from the adaptation fund, 56 paragraph

- Studies of the decisions of the Board of Directors meetings.
- Interviews with project management staff, beneficiary organizations and partner organizations.
- On-site observations of activities.
- Meetings and discussions with local self-government bodies and existing NGOs.
- Other additional interviews, surveys or document reviews that will contribute to a full evaluation of the works.

While performing the monitoring work our team aimed:

1. To identify the extent to which the Project has achieved the following medium-term expected results at the time of the study, namely:
    - Community based, climate smart agricultural practices are implemented in degraded areas to reduce climate risks vulnerability of production systems and sustain protected areas.
    - Value chains for climate smart agriculture are strengthened and climate smart technologies are accessible for vulnerable rural communities, including equally for women and men.
    - Awareness, planning, monitoring and decision-making capacity on climate smart agriculture production methods and land degradation neutrality has increased in target communities.
2. Provide the Donor and Project stakeholders with information about our studies and analysis of the project activities and results;
3. Provide recommendations for compliance, sustainability enhancement, current and future activities.

During the monitoring, we studied:

- “Strengthening land based adaptation capacity in communities adjacent to protected areas in Armenia" grant program,
- Work plans and project budget,
- Reports submitted to the Adaptation Fund,
- Reports, procurement plans and work implementation schedules submitted to Management board,
- Appropriate monitoring and evaluation policies for the Adaptation Fund.

During monitoring and evaluation, our team:

- Visited the project implementation sites.
- Cooperated with the municipal governments, directly having discussions with the heads of the communities.
- Cooperated with “Environmental Projects Implementation Unit” state institution on the problems that arose, organizing relevant discussions.
- Conducted necessary audio-video recordings for the evaluation.
- Organized discussions with community residents.
- Organized discussions with Project beneficiaries.
- Developed questionnaires for the beneficiaries and studied their opinion regarding the works.

As a result, our team

- Got familiar with the course and progress of the activities planned within the framework of the project,
- Investigated and assessed the effectiveness, sustainability and the impact of project implementation,
- Found out the social and environmental risks
- Investigated the perspectives of the implementation of project goals, and its impact on sustainability,
- Investigated the compliance of the implemented actions with the actions planned in the program,
- Investigated the compliance of the implemented works with gender equality, identification of social and environmental risks and application of mitigation measures.

Summary evaluation of the project.

During monitoring, the following preferred evaluation system was applied according to the Terms of Reference.

- Excellent
- Sufficient
- Moderately satisfactory
- Insufficient
- Moderately unsatisfactory
- Extremely unsatisfactory

2.1 Logical Framework of activities

			Status / Կարգավիճակ
Component 1			by monitoring date DEC 2021
1	1.1	Irrigation system construction	Ongoing
		Installation of 38 kilowatt-hour solar pumps	Completed
		Establishment of parks without drip irrigation system	Ongoing
	1.2	Construction of drip irrigation system	Planned on 2022
	1.1-1.2	Preparation of Design-Estimated Documents	Completed
	1.3	Reconstruction of existing field tracks and Installation of water culverts	Completed
		Preparation of Design-Estimated Documents	Planned on 2022
	1.4	Rehabilitation of arable lands	The works 1.4 and 1.5 were combined into one tender package. A tender was announced 3 times. Bids were not made due to high bids. The EPIU SA applied to the Adaptation Fund to agree to reduce the amount of mineral and organic fertilizers by 25-45%. After approval, the purchase order was processed in 3 installments. The tender works will be carried out in 2022.
	1.5	Rehabilitation of community pastures and hay meadows	
		Establishment of parks with drip irrigation system	Planned on 2022
	1.6	Construction of livestock watering points	Completed
	1.7	Increasing adaptation of degraded slopes	Planned on 2022
Component 2			
	2.1	Smart agricultural practices	Completed
		0,5 ha sowing of herbs	
		Creation of testing areas on the fields	
	2.2	Demonstration of land improvement with organic fertilizers on household lands	Planned on 2022
	2.2	Construction of solar greenhouses with drip irrigation	Planned on 2022

	2.3	Construction of solar dryers for fruits and vegetables and herbs	Planned on 2022
		Construction of anti-hail nets	Planned on 2022
		The introduction of heat-resistant, dry resistant new varieties and crops	Planned on 2022
		Planting shrubs and mulching	Completed
	2.4	Community management and business plans, including for climate smart agricultural value chains and increasing adaption of natural and agricultural ecosystems	Completed
Component 3			
	3.1	Workshops	Completed
		Development of questionnaires and conducting surveys	Completed
		Development of field schools training programs	Completed
		Organization of field school groups, knowledge enhancement, demonstration field experiments	Completed
	3.2	Explore communities' needs and capacities	Completed
		Develop a training and awareness-raising program	Completed
		Develop topics for the project	Completed
		Implement knowledge and skills training program	Ongoing, scheduled for completion in 2022.
	3.3	Develop a plan for dissemination of project materials, results, best practices	Planned on 2022
		Disseminate project materials, results, best practices	Planned on 2022
	3.4	Develop strategies for sustaining climate smart agriculture and LDN in target areas.	Planned on 2022
		Determine the existing non-governmental organizations, women, youth, environmental and other unions in the communities and develop capacity building plan for them.	Planned on 2022
	3.5	Establishment and implementation of Monitoring System for land based adaptation measures and land degradation neutrality	Planned on 2022

Gap analysis

The mid-term review of "Strengthening land based adaptation capacity in communities adjacent to protected areas in Armenia" was carried out on the basis of the contract (№ ՀՀ-ԲԾ-Ա-ԳՀԾՁԲ-

22/69, 05/06/2022) between the “Environmental Projects Implementation Unit” state agency (Ministry of Environment of RA) and Kristina Sargsyan Bagrat Private Entrepreneur.

The main purpose of the Technical Assignment is to study and evaluate the progress of the activities carried out in the period from September 2019 to December 30, 2021 within the framework of the grant program “Strengthening land based adaptation capacity in communities adjacent to protected areas in Armenia”.

For the mid-term review, visits were made to the areas of implementation of the activities planned by the program, meet with the interested parties and beneficiaries were organized, and direct discussions were held. For the evaluation purposes, we also collected opinions about the activities implemented by the program from the administrative representatives of the administrative units.

As a general omission, we can mention the extension of the work plan by 1 year, which is essentially the result of a force majeure situation caused by the COVID 19 pandemic. The observed results are presented in the form of a table below:

N	Description	Results of observations
1.1	Irrigation system construction	The works are mostly completed, except for the new irrigation system in Shaghap community, the implementation of which we were present during the visit. The results of the works generally correspond to the volumes planned and determined by the project plan.
	Installation of 38 kilowatt-hour solar pumps	The works have been fully completed, the station was built according to project proposals in Shaghap community. Problems related to plant maintenance, data collection and other issues have been reported after the appointment of a new administrative manager, who is still not familiar with the current operation of the solar plant, and a relevant specialist has not yet been appointed. (նկար 3/ picture 3)
	Establishment of parks without drip irrigation system	Planned works has carried out in the nearby-enlarged settlements of "Dilijan" National Park- in the city Dilijan, and Teghut, Khachratsin, Haghartsin velliges. An inconsistency appeared during the implementation of the project, while still in the study phase of the project, the officials conducting the study and the administrative bodies of the communities presented the plan for the establishment of gardens orally.

		The possibility of implementation of drip irrigation and fencing works was also discussed. However, this condition was not included in the programs and is not found in any written wording. The project concept, which was approved by the Adaptation Fund, did not planned the construction of a drip irrigation system in orchards for the settlements of the enlarged community of Dilijan. Within the scope of this process of monitoring and evaluation, while visiting the sites, we have encountered certain complaints from the beneficiaries on this issue. We received an explanation of the problem from the project implementation officials that the Stakeholders were explained that the drip irrigation system requires a high pressure irrigation water system, which was essentially absent in all settlements, so a drip irrigation system could not be implemented. And also the construction of the fence is also very important, but this should have been the contribution of the beneficiary. (նկար 8 / picture 8)
1.1-1.2	Preparation of Design-Estimated Documents	Fully completed and are in accordance with the project plan.
1.3	Reconstruction of existing field tracks and Installation of water culverts	The works are mostly completed. In Teghut, Aghavnavanq,Hachardzan and Gosh communitys it was effectively implemented (picture 9), in Urtsadzor community the water-carrying streams went out of their way and damaged some parts of the field roads reconstructed by the project (picture 1). The drainage ditches have been reconstructed (Figure 2).
1.6	Construction of livestock watering points	The works are fully completed. They were carried out together with the works provided in 1.3 point, within the framework of the same tender.
2.1	Smart agricultural practices 0,5 ha sowing of herbs Creation of testing areas on the fields	Within the framework of the project, a field of herbs was established in the pasture of Urtsadzor settlement. The area was selected with the aim of providing natural protection, but according to the project beneficiary Sargis Sargsyan, a herd of domestic animals appeared in the planted field and during the spring visit, the growth of medicinal plants in the field was damaged. In the other part of the project, thyme and mint plants were provided for planting in plots near the houses. These works are still in progress.

2.3	Planting shrubs and mulching	These works were carried out in the communities adjacent to the "Khosrov forest" state reserve and the "Dilijan" national park, in the gardens of the beneficiaries. During the visit, we encountered mostly successful (picture 7), partially successful works (picture 4) and failed work (picture 6). Partially success is due to the fact that some beneficiaries find it difficult to obtain the pillars necessary for thornless blackberry cultivation. The lack of an irrigation system was identified as the main reason for the failed operation. The beneficiary is currently making a condition to continue the work if an irrigation system and pillars are provided. The EPIU SA is considering allocating some money from the saved funds for these works, provided that the beneficiary will restore the garden, plant new bushes and make the area look good.
2.4	Community management and business plans, including for climate smart agricultural value chains and increasing adaption of natural and agricultural ecosystems	Fully completed.
3.1	Workshops	Fully implemented. Beneficiaries participated in the trainings, quoting and referencing the trainings during the meeting –discussions.
	Development of questionnaires and conducting surveys	
	Development of field schools training programs	
	Organization of field school groups, knowledge enhancement, demonstration field experiments	Among the introduced field schools was the school located in Urtsadzor settlement (picture 5), which was not overloaded during our visit.

3.2	Explore communities' needs and capacities	Fully completed.
	Develop a training and awareness-raising program	
	Develop topics for the project	
	Implement knowledge and skills training program	

Observations and Recommendations

In the results of the mid-term review of the results of the " Strengthening land based adaptation capacity in communities adjacent to protected areas in Armenia" grant project, we have an expert summary rating of "Satisfactory" according to the evaluation system presented in the Technical Terms of Reference.

The major gap where causality is evident:

- In the initial period of work (2018), awareness activities were insufficiently carried out with the beneficiaries of the project. Later, the restrictions due to the coronavirus pandemic and the 44-day war hindered the awareness activities. The frequently changing lists of beneficiaries were due to the aforementioned reasons as well as to emigration and expatriate work. Inconsistencies in communication have led to delays in park establishment and inefficient development of established parks. In this gap, there were also a preference for local, narrow personal interests and an unsympathetic approach by the people in charge of the villages. In the villages where we have a leader more motivated, we have met an effective work.

Recommendations

- Based on the project documents for the installed solar panel (Shaghap community), main indicators of the panel's activity and productivity must be provided to the head of the community. Being a newly elected head of the community, she needs information and explanatory materials.

- Put efforts and resources to the establishment of a demonstration garden in the target areas of the project by introducing best practices. According to our expert observation, based on local and mental characteristics, the establishment of at least one successful productive garden will provide more targeted problem-solving effect, than the equal distribution of resources among several beneficiaries. In this case, competition was observed for the attraction of the resource and not for the increase of efficiency.

Appendix