REQUEST FOR PROJECT/PROGRAMME FUNDING FROM THE ADAPTATION FUND

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

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

Please note that a project/programme must be fully prepared (i.e., fully appraised for feasibility) when the request is submitted. The final project/programme document resulting from the appraisal process should be attached to this request for funding.

Complete documentation should be sent to:

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ADAPTATION FUND

PROJECT/PROGRAMME PROPOSAL TO THE ADAPTATION FUND

PART I: PROJECT/PROGRAMME INFORMATION

Project/Programme Category:	Regular project
Country/ies:	Armenia
Title of Project/Programme:	**Strengthening land based adaptation capacity in communities adjacent to protected areas in Armenia**
Type of Implementing Entity:	NIE
Implementing Entity:	"Environmental project implementation unit" SA
Executing Entity/ies:	Ministry of Nature Protection of RA
Amount of Financing Requested:	**2 506 000** (in U.S Dollars Equivalent)

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.

Introduction

1. Due to its climate and pronounced location in the South Caucasus with a mountainous landscape, fragile ecosystems and a vulnerable, agricultural based economy, the compounding effects of climate change and land degradation particularly affect livelihoods and economies of Armenia and its approximately 3 million inhabitants. In fact, climate trends over the previous 90 years have already indicated a significant warming trend. 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 substantially 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.

2. Notably areas and communities adjacent to protected areas and forests – like Khosrov Forest State Reserve and Dilijan National Park - are vulnerable due to a persistent pressure on the remaining land and pasture resources, weak rural infrastructure and the lack of alternative income opportunities. The existing capacity to adapt to a changing climate and its increasing impacts on the rural livelihoods and their production systems is low, calling for concerted efforts to addresses the compounding challenges of land degradation and climate change impacts on rural livelihoods.

Country Context

3. The Republic of Armenia is a mountainous, landlocked country in the Southern Caucasus region neighboring Azerbaijan (East), Georgia (North), the Islamic Republic of Iran (South) and Turkey (West). The majority of its territory (76.5%) is situated on the altitudes of 1000-2500 m above sea level with the lowest point at 800m in the Ararat Valley and the highest point being Mount Aragats with 4090m. The country has an area of some 30,000 km^2 and a

population of approximately 3 million. The climate is continental, with hot summers and cold winters. Landscapes are mainly plateaus and mountain ranges separating narrow plains.

4. The Republic of Armenia is a lower middle-income country that went through a transition to a market based economy and parliamentarian system since independence from the Soviet Union in 1991. Its economy is dominated by extractive industries and agriculture with Yerevan as its economic hub and capital city. Armenia has a per capita Gross National Income (GNI) of US$ 3770[1] and a poverty headcount ratio at national poverty lines of 29.8%; It ranked 85th in the 2015 UNDP Human Development Index.

5. Despite economic progress over the last decade, disparities between women and men remain salient in Armenia, especially in dimensions that are powerfully influenced by social norms. In domains like education and health, gender equality in outcomes in Armenia are broadly comparable with those in Europe and Central Asia and better than th ose of lower-middle-income countries globally. However, barriers to women's access to economic opportunities persist and gender inequalities are manifest in demographic imbalances, and underrepresentation in leadership roles. Concerted policy efforts are required to close gender gaps that hamper growth of the overall economy.

6. Social norms and patriarchy continue to place barriers to economic participation by women, causing both a misallocation and underutilization of women's human capital. These barriers are manifest in occupational segregation of women, a gendered concentration in particular fields of study in tertiary education, a dip in female labor force participation during the childbearing years, and the underrepresentation of women among political leaders and entrepreneurs. Gender-selection of births in favor of boys also has far reaching demographic and economic effects. As Armenia strives to grow and become competitive in the global market, effectively addressing these gender gaps can bring tangible benefits to the country as a whole.

7. Agriculture has traditionally been the backbone of Armenia's economy; While it's GDP contribution declined from 26% in 2000 to 18% in 2016 (World Bank, 20182), the agriculture sector provides with 44.2% still the majority of the total employment (World Bank, 2018). Much of Armenia's population is poor and highly vulnerable to any event that affects the agricultural sector (Ahouissoussi et al., 20143). The share of women engaged in informal employment in agriculture is about 82.1 % compared to 60.8% of informal workers in agriculture being men; There is a significant gender pay gap in agriculture with women average wages of approximately 65.9% of men's average wages (FAO, 20174). Women head about 26.5 % of rural households, whereas most of the land is registered and managed by men limiting women's access to land. Women have less access to build their knowledge on agricultural technical knowledge and face barriers to participating in trainings.

    - Women's low levels of agricultural education mean that they are far less likely to hold decision making and management positions in agricultural spheres. Therefore, women's

[1] Current US$; Atlas method (World Bank, 2018: https://data.worldbank.org/country/armenia, accessed January 2018)
[2] World Bank, 2018: https://data.worldbank.org/country/armenia, accessed January 2018
[3] ibid
[4] FAO, 2017: Gender, Agriculture and Rural Development in Armenia; Budapest

voices in and knowledge about agriculture are missing in policy development. This also constrains innovation in the value chain, which is subsequently reflected across multiple dimensions in food security and nutrition.

- Women's participation in training, and knowledge and information sharing, in agriculture and rural development is low. The reasons for their low participation in extension services' training include:
    - Male-dominated channels of communication that control the flow of information and fail to reach and mobilize women farmers;
    - The identification of men as "heads of households and holdings": as a result, women tend to be seen as "wives of farmers" instead of farmers in their own right;
    - Stereotypical linkages between machinery, technology and men;
    - Land registered in the name of men as "heads of households";
    - Women's reduced self-confidence in areas outside those that are socially attributed to them based on gender roles and stereotypes; ix
    - The location of training and meetings: women have limited access to means of transportation, some locations discourage women's attendance and some women may be expected to ask for permission from their husbands to attend.

8. The country's agricultural sector is mainly geared toward subsistence farming, but surplus production is marketed. Currently, the sector does not meet Armenia's food needs and is still reliant on government subsidies. The household farms sector, which includes a large number of peasant farms, but also includes rural and urban household farming and gardening companies, produces over 90 % of agricultural output (Ahouissoussi et al, 2014[5]). The prevailing farming system is mixed farming, where crops and livestock are equally important and in some regions, either crops or livestock could be dominant. It should be noted that given the spatial variability of soils and climate, and access to water, many areas of Armenia out- side of the lower-elevation areas are unsuitable for high-value vegetable production and produce more resilient, less input-intensive crops such as wheat, maize and forage in the more mountainous areas (Ahouissoussi et al., 2014[6]).

9. Armenia hosts exceptionally rich and globally significant biodiversity. 11.2% of the country's territory is covered with forests. Due to intensive nature use the level of anthropogenic changes of natural landscapes in Armenia is high. Overexploitation has resulted in pollution and reduction of wild biodiversity, loss of habitats of certain species and changes in the services provided by ecosystems. Currently 3 reserves, 4 national parks and 27 sanctuaries have been established in the Republic of Armenia, restricting the use of natural resources by the residents of surrounding communities. Residents of communities living near specially protected natural areas have limited possibilities to use of land and water resources, and as a result anthropogenic and natural pressure to natural ecosystems near communities significantly increases. Under these conditions, degradation of natural ecosystems adjacent to communities is progressing gradually reducing the capacity to adapt to climate change.

[5] Ahouissoussi, Nicolas, James E. Neumann, Jitendra P. Srivastava, Brent Boehlert and Steven Sharrow. 2014. *Reducing* Vulnerability of Armenia's Agricultural Systems to Climate Change. World Bank Studies. Washington, DC: World Bank. doi: 10.1596/978-1- 4648-0147-1

[6] ibid

Progressing climate change conditions (increase of temperature, decrease of precipitation, flood and hail frequency) reduce agricultural productivity.

10. Land degradation is a driver of vulnerability to climate change and, through the loss of soil organic carbon, contributing to climate change. Land degradation and the diminishing capacity of agro-ecological systems to adapt to climate change are closely related. The 2015 "National Strategy and Action Program to Combat Desertification in the Republic of Armenia" recognizes natural and anthropogenic desertification factors. Natural factors include: droughts that are frequent in the Ararat valley and some areas of Vayots Dzor and Syunik regions; Sandstorms are frequently observed in Ararat valley, Vayots Dzor and Syunik regions; Moisture deficit caused by unequal distribution of seasonal and regional rainfall, landslides and floods as well as salinization. Anthropogenic factors include: Urban development, agriculture practices, absence or inappropriate application of crop rotation techniques, ineffective use of irrigation water and nutrients, overgrazing of pastures; Road construction; Illegal logging and soil contamination. Nearly half of the cropland and forest-land are affected by water erosion (220,000ha and 186200ha respectively), while approximately 170,000 ha are affected by overgrazing. Armenia has set in its **Land Degradation Neutrality**[7] National Strategy voluntary and ambitious targets to achieve land degradation neutrality, a process to which this project is contributing. It is estimated that interventions on 407.5 km2 are require with an investment need of US$ 210 million until 2040.

Climate and projected climate change impacts

11. Armenia has a highland continental climate with hot summers and cold winters. The mean temperature in Armenia is 5.5°C, with the hottest regions being the Ararat Valley with an average 12 to 14°C. Summers are warm with a mean temperature of 16 to 17°C; however, the hottest regions typically have a high around 24 to 26°C, and extremes there can reach 38 to 40°C (FAO, 2008). Average winter temperatures are approximately −7°C. On average, Armenia receives 592 mm of rainfall annually, but levels vary significantly by region. In the Ararat Valley and Meghri region, annual precipitation is only about 200 to 250 millimeters, while some mountainous regions can receive as much as 1,000mm each year.

Table 1. Annual mean temperature and precipitation changes in 1929-2012 changes relative to the 1961-1990 average (Yerevan)

Time period	***Air temperature, ^0C***	***Time period***	**Precipitation, mm (%)**
1929-1996	+0.4	1935-1996	-35(-6)
1929-2007	+0.85	1935-2007	-41 (-7)
1929-2012	+1.03	1935-2012	-59 (-10)

12. Long-term trends over the previous nearly 90 years indicate a change in annual ambient temperature and precipitation in Armenia for various time periods. These results show that, in

[7] United Nations Convention to Combat Desertification (UNCCD) defines land degradation neutrality as: "a state whereby the amount and quality of land resources necessary to support ecosystem functions and services and enhance food security remain stable or increase within specified temporal and spatial scales and ecosystems"

recent decades, there has been a significant temperature increase (table 1; figure 1). In the period of 1929-1996, the annual mean temperature increased by 0.40C and in the period from 1929-2012by 1.030C. The spatial distribution of changes in precipitation amounts is fairly irregular. Over various seasons of the year ambient air temperature changes exhibit different trends. Extremely hot summers have been observed over the last 17 years (1998, 2000, 2006, 2010) (figure 1). The comparison of changes in the assessment of precipitation amounts for different periods demonstrates that precipitation continues to decline. Observations showed that, in 1935-1996, there was a 6% decrease in annual precipitation, while in 1935-2012 it was close to a 10% decline (figure 2). The spatial distribution of changes in precipitation amounts is fairly irregular. Over the last 80 years, the climate in the northeastern and central (Ararat Valley) regions of the country has turned arid, while precipitation has increased in the southern and northwestern regions, as well as in the western part of the Lake Sevan basin.

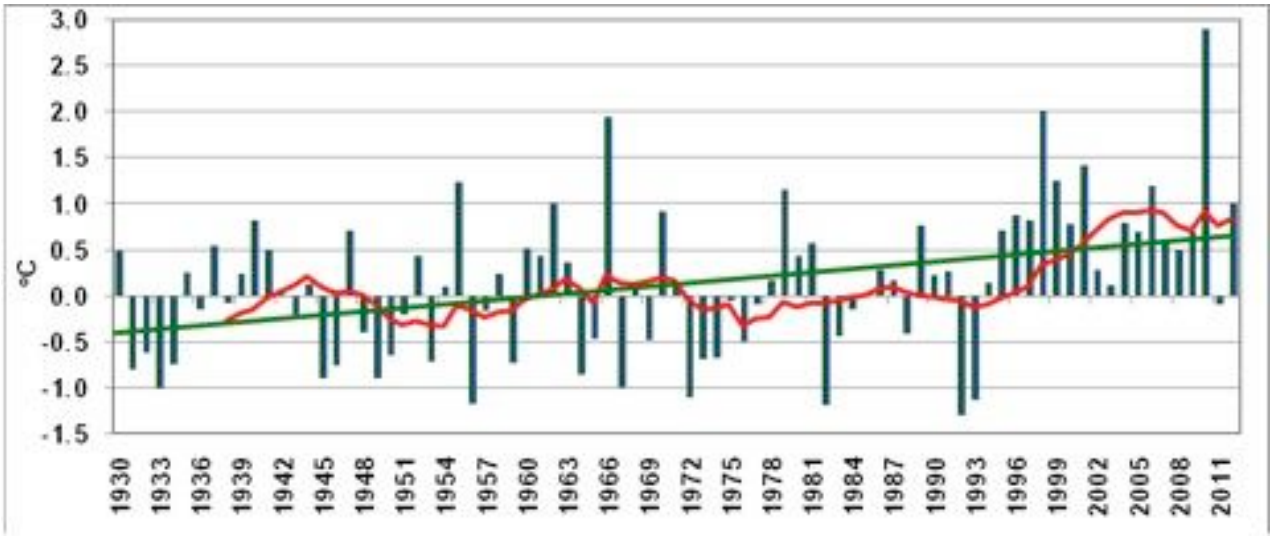


Figure 1. Deviations of average annual air temperature in the territory of Armenia from the average values for 1961-1990

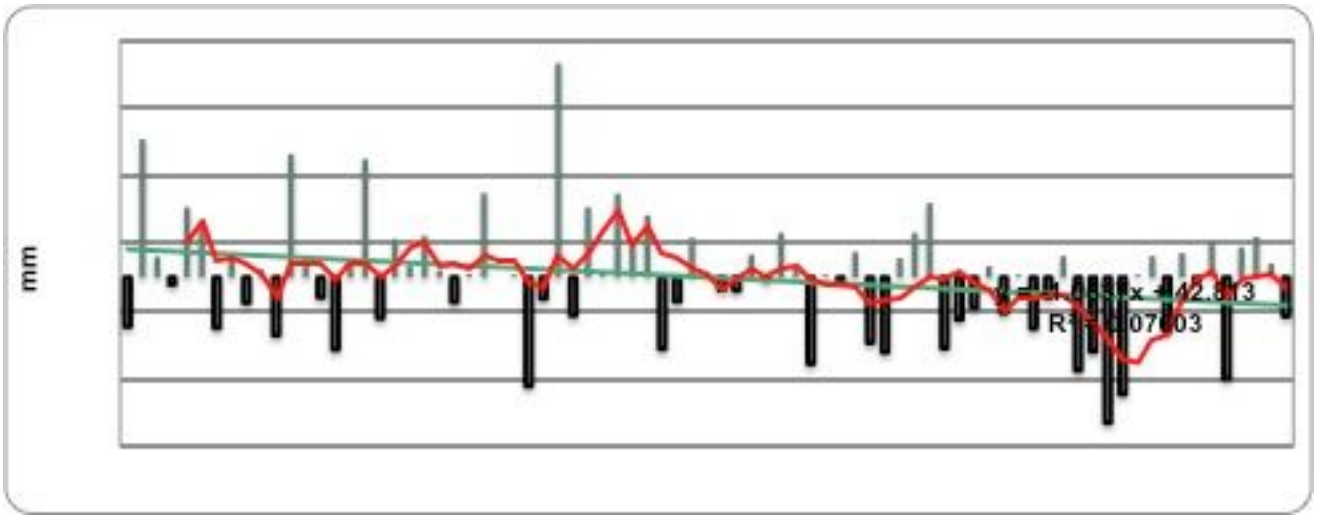


Figure 2. Deviation of annual average precipitation in the territory of Armenia from the average of 1961 -1990

13. In recent decades, the frequency and intensity of natural disasters has increased both in Armenia impacting economy and human lives. Extreme events (hail, frost, strong winds, heavy rainfall, floods, droughts, heat waves) may be contributing to the generation of natural calamities (or their escalation), such as landslides, avalanches, mudflows, forest wildfires, rock-falls, outbreaks of infectious diseases, etc. Between 1980-2012 most hazard events (frost, hail, strong winds, and heavy precipitation) were observed in 2004 (245). The amount of hail is greatest in Shirak valley; heavy precipitation is most common in Tashir and Ijevan regions; more frost events are observed in Ararat Valley and pre-mountainous regions. The number of frost events has increased significantly as the annual mean temperature increase in Ararat Valley mostly occurs in March, which triggers the earlier start of vegetation; the sharp temperature fall in April consequently increases the frequency of frost events. Also the number of days with heavy precipitation and hail has increased. This is due to the higher frequency of penetration of high cyclones generating heavy rain and hail clouds.

14. Ex ante climate change scenarios have been studied for Armenia in line with the Intergovernmental Panel on Climate Change (IPCC) recommended RCP8.5 and RCP6.0 scenarios for CO2 emissions. Therefore, as per the RCP6.0 scenario CO2 concentration is estimated at 670ppm by 2100 and at 936ppm according to the RCP8.5 scenario. Accordingly forecasts for the year 2100 for ambient air temperature and rainfall indicate that the temperature continues to increase in all seasons of the year (table 2). However, according to the RCP8.5 scenario, starting from the mid-21th century (2041-2100) the temperature will rise at a more rapid rate. It is very likely that by 2100 the average annual temperature in Armenia will be 10.20C, which exceeds the baseline (1961-1990) by 4.7 0C. Figure 2 presents spatial distribution maps for annual mean temperature for the 1961-1990 baseline and projections for 2071-2100. Increased temperature in mountainous regions demonstrates an apparent retreat in negative temperatures (figure 2). For example in 2100 annual mean negative temperatures will be maintained only in the highlands of Aragats, Geghama, and the Zangezur mountains. In general, seasonal and annual temperature and precipitation change trends are similar. It should be noted that maximum temperature increase is observed during the summer.

Table 2. Projected changes in annual and seasonal average temperatures in the territory of Armenia compared to the average for 1961-1990, ^{0}C

Seasons	*1961-1990 average*	*Scenarios*	*2011-2040*	*2041-2070*	*2071-2100*
Winter	-5.3	RCP, 6.0	1.4	2.6	3.6
		RCP, 8.5	1.7	2.8	4.4
Spring	4.3	RCP, 6.0	1.3	2.4	2.7
		RCP, 8.5	1.4	2.7	3.9
Summer	15.7	RCP, 6.0	1.9	3.0	3.8
		RCP, 8.5	2.1	4.0	6.0
Autumn	7.2	RCP, 6.0	0.8	2.3	3.0
		RCP, 8.5	1.4	3.2	4.4
Year	5.5	RCP, 6.0	1.3	2.6	3.3
		RCP, 8.5	1.7	3.2	4.7

15. Although the results of different climate change models reproduce changes in temperature fairly well, there are large uncertainties in terms of precipitation. According to the RCP8.5 and

RCP6.0 scenarios for the summer months there is an expected significant decrease in precipitation in all 3 periods in 2011-2040 summer precipitation is expected to decrease by about 23% compared to the baseline (1961-1990) period. The distribution of annual precipitation in Armenia will not undergo significant change; According to the model projections, summers will become drier and hotter, leading to a variety of problems in water resources, agriculture, energy, healthcare and other sectors.

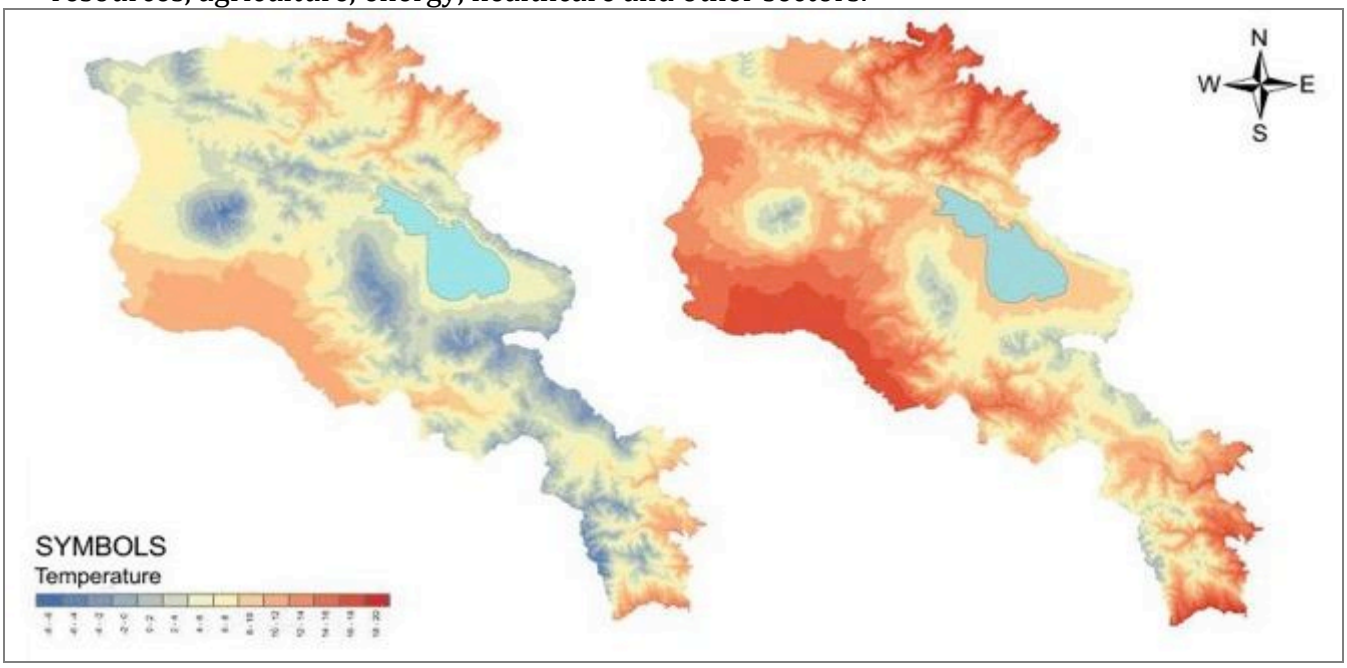


Figure 2. Distribution of annual average temperature in Armenia in (a) 1961-1990 and (b) projections for 2071-2100, RCP 8.5 scenario

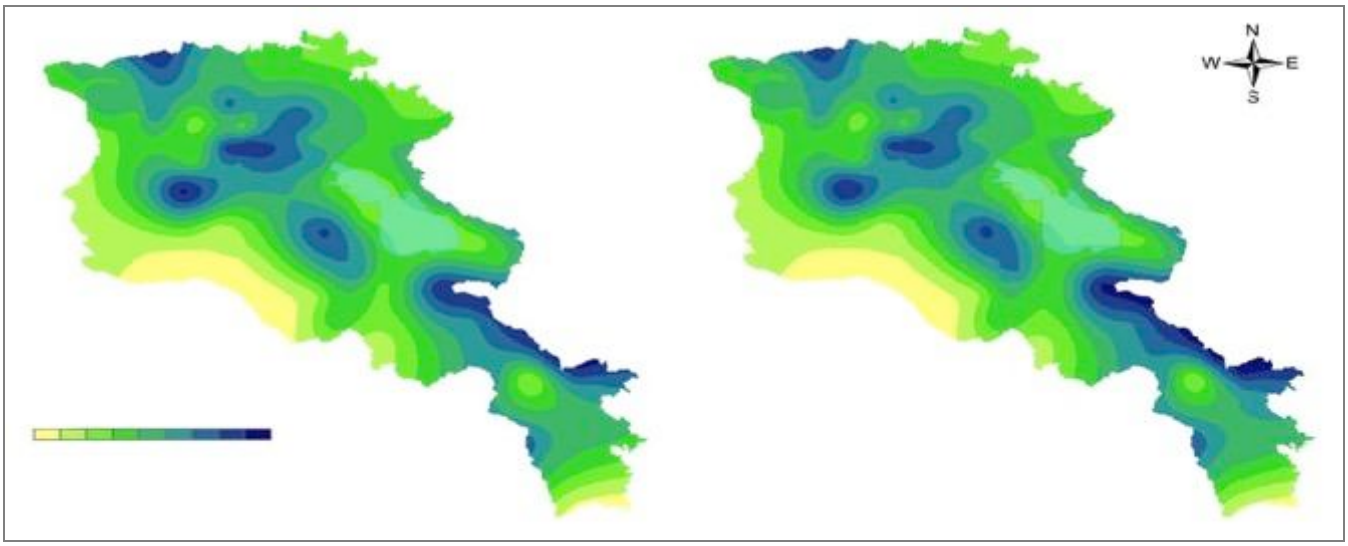


Figure 3. Distribution of annual average precipitation (mm) in Armenia in (a) 1961-1990 and (b) projections for 2071-2100, RCP 8.5 scenario

16. *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.

This has implications for women in rural areas, who take on the main responsibility for domestic activities and are major users of water. When water is restricted or centralized availability is non-existent, women then are mainly responsible for fetching water, adding time and labor burden to women and decreasing their ability to participate in economic, educational, caretaking, and leisure activities. From the national statistic service in Armenia: rural women spend 6 hours 6 minutes per day, from Monday to Sunday, on their domestic workload, while urban women spend 4 hours and 53 minutes and rural men spend 2 hours and 37 minutes.

Without implementing adaptation measures as part of the core development policy, strategies and plans, these consequences are likely to be significantly exacerbated over time. Table 3 summarizes the potential impacts of the main climate change effects and drivers.

i. *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) has 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;

ii. *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 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.

iii. *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.

iv. 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.

Table 3. Potential climate change impacts in Armenia

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 - hail storms - 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;

Priority areas for climate change adaptation

17. Armenia is affected by the compounding effect of climate change and land degradation and its impact on livelihoods and local economies. The project focuses therefore on the two hotspots

of land and forest degradation and will address the intertwined issues related to climate change adaptation, land degradation and bio-diversity. Communities adjacent to protected areas and forest reserves are hotspots for land degradation and their rural livelihoods and production systems thus particularly vulnerable to climate change impacts due to resource overexploitation and limited alternative income opportunities.

18. The project will therefore focus on areas adjacent to two remaining and protected forest areas: **Khosrov Forest State Reserve** in the Ararat Marz in south western Armenia (south east 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 bio-diversity 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. "Khosrov Forest" State Reserve and "Dilijan" National Park and their adjacent ecosystems are important migratory routes for the main species registered in the Red Book of Armenia and the involvement of communities in the management of routes will significantly improve the efficiency of species conservation.

i. "Khosrov Forest" State Reserve occupies a territory of 23,359 ha. Reserve area is isolated from the basic infrastructure and only from south- west it borders the densely populated Ararat valley. The area is characterized by unique semidesert, phryganoid, sparse forest mountain-steppe landscape symbioses. Intrazonal wetland ecosystems are also represented in the area of the reserve along the riverbanks, as well as in vicinities of Mankuq and Gyolaysor dwellings. 1948 species of vascular plants and 1783 species of animals of which 1500 species of invertebrates and 283 species of vertebrates are preserved in the reserve.

ii. "Dilijan" National Park occupies a territory of 33,765 ha typically covered with forests. Dilijan National Park is a unique site of Armenia's wildlife, which stands out by the wealth of original biodiversity, mesophile woodlands, separate ecosystems of scientific, educational and economic interest, as well as by its patrimonial, environmental, cognitive, curative and recreational assets. 1200 species of vascular plants and 1660 species of animals of which 1431 invertebrates and 229 species of vertebrates are preserved in the area.

19. Community adjacent to Khosrov Forest State Reserve **-** Urtsadzor community is located in the foothills of the western part of Ararat valley and consists of three rural settlements Urtsadzor (3320 inhabitants), Lanjanist (175 inhabitants) and Shaghap (1030 inhabitants). The combined population of 4525 inhabitants in 2017 (approximately 1000 households) is mainly engaged in cattle breeding, plant cultivation and fruit growing. Table 4 provides an overview of the main characteristics of the community. Farmers are engaged in horticulture, cattle breeding, crop production, vegetable growing, beekeeping and fodder production.

i. The summers are warm, and the winters are moderately cold. Winters begin mid-December, average January temperature ranges from -3 to -5 ° C. Summer is long, from May to October, the average monthly temperature of the air reaches 24 to 26 ° C and maximum 39-40 ° C. Often heats with strong winds are observed that are causing considerable damage to agriculture. The annual precipitation is 250-300 mm. The rivers belong to the Caspian basin (Arax River).

ii. Natural landscapes are semi-deserts that have been transformed into a cultivated-irrigated landscape. From the agro-climatic point of view, the community lies in the absolute irrigation zone as the average annual precipitation does not exceed 32-36 mm in summer.

iii. The arable land in the community administrative area is 758ha, remote pastures are 550ha, community pastures 7767ha, perennial herbs 121ha, gardens 40ha and 163ha of land plots. In 1991, during the privatization of the lands in the country the size of one plot of land privatized in the community settlements made 0.45 ha. Crop production in the community is possible only with irrigation. On average between 2013 and 2017 250-300ha of fall wheat was produced, 40-60ha of spring barley, 40ha of cigarettes and 70ha of vegetables and melons.

iv. As of 2017 data, the community residents keep 3299 heads of cattle and 3760 heads of small cattle, 90 pigs and hens. Compared to 2013, the number of cattle decreased slightly. The average milk yield of one 1 cow decreased by 300 liters reaching from 2000 liters to 1700 liters.

v. Since the crops are cultivated only in irrigated areas of the community, their yield is mainly conditioned by the quantity of irrigation water supplied and natural hazards. The analysis of the collected data shows that during the previous 5 years no increase has been observed in harvesting, though the farmers have maintained the rules of cultivation of agricultural machinery. This is mainly due to the lack of irrigation water and efficiency of the deteriorated irrigation system, where 80% of water losses occur in the primary and secondary irrigation channels. Irrigation is done openly (irrigation dykes), the majority of which are disturbed and large water losses (see photo). Another factor is frequent hails, spring frosts, high summer temperatures, hot winds.

vi. Residents of rural communities live in socially unfavorable conditions. About 45% of the total annual income is received from salaries, 10% from farming, 5% from livestock, 33% from other sources (pensions, allowances, transfers from other countries, etc.).

20. Communities adjacent to Dilijan National Park – Dilijan, Margahovit and Fioletovo communities are located in the south-western part of Tavush Marz. Dilijan community was established in 2016 and comprises Haghartsin, Aghavnavanq, Gosh, Khachardzan and Teghut rural settlements. The total population of Dijilan and the rural communities belonging to it was 6813 people, 3551 people in the Margahovit community and 1279 people in the Fieletovo community.

i. The climate is moderately warm and humid. Dilijan, Margahovit and Fieletovo and adjacent rural communities are located in moderately damp areas with warm summers and mild winters. The rivers belong to the Caspian basin (Kura river).

ii. The average monthly temperature in January is -2 ° C and 18.2 ° C in July. Air dryness is particularly evident in the winter and spring months. The relative air humidity is 65-70%, the precipitation is 600-650 mm. Winters begin in early December. It is moderate hot in summer. The average temperature in July is + 18 ° C and the maximum is 32-33 ° C. Occasionally, there are hot springs which can cause some damage to agriculture.

iii. The territory of the community is almost entirely surrounded by a forest, from the upper boundaries of which the mountainous pastures begin. The area is distinguished by the

great diversity of flora and fauna. Mixed forests occupy 61% of the total surface, which are distinguished by the diversity of flora and fauna.

iv. The climatic conditions of the area (mild, mineral healing water, forests, highlands rich with herbs) are extremely beneficial for the recreation of the population, restoration of health and international tourism. The territory is rich in historical and cultural monuments, monasteries, fortresses, khachkars (cross-stones), bridges, tombs, monuments, and memorials.

v. Farmers are engaged in horticulture, livestock breeding, crop production, bee-keeping and feeding. The area is relatively poor with minerals but is rich in mineral water. There are two mineral water plants operating in Dilijan. From the agro-climatic point of view, the community lies in the moderate irrigation zone as the average annual precipitation does not exceed 250-300 mm in summer.

vi. Autumn and spring wheat and barley can be cultivated in the community under dry conditions. Whereas the cultivation of orchards and vegetables and melons is only possible in case of irrigation. The analysis of the collected data shows that the yield of all crops is considerably lower than the national average, mainly due to the insufficient quantity of irrigation water supplied and natural hazards (e.g. hail storms). This is mainly due to the lack of irrigation water as the irrigation network is completely demolished. Another factor is the frequent recurrent hails, spring frosts, high summer temperatures, and hot winds.

- Dilijan community has vast areas of remote pastures (5879ha) and community pastures (1330ha), whereas the community keeps largely cattle, small ruminants and poultry and pigs. Compared to 2013 the number of cattle has substantially decreased by more than 40% in 2017, whereas average annual milk production decreased by 150 liters with an average between 1250 liters and 1100 liters annually.
- Margahovit community has vast areas of remote pasture (2840ha) and community pastures (990ha), hay meadows, plots and horticultural land cultivating predominately potatos, melons, and vegetables. In the highlands of the community only autumn and spring wheat and barley can be grown in dry conditions. The community keeps mainly cattle and small ruminants, whereas the number of cattle has decreased since 2013 by about 14%. The average milk yield of one 1 cow decreased marginally by 20 liters reaching from 1520 liters to 1500 liters.
- Fioletovo community is the smallest of the priority communities and has remote pastures (90ha) and community pastures (194ha) and has a relatively large crop and horticultural production area dominated by potatoes, cabbage, beet and other annual and perennial crops. Cattle are predominately kept by the community and has seen a slight increase (approximately 5%). The average milk yield of one 1 cow amounts to 1,700 liters.

vii. The presented data indicate that in all communities there are high poverty level and low birth rates, which are close to the republic's average level. Socially vulnerable target groups make up about 25 percent of the population.

Table 4: Key indicators for priority communities

Key indicators	**Aragat Marz** **Adjacent to Khosrov Forest State Reserve**	**Tavush Marz** **Adjacent to Dijilan National Park**		
	Urtsadzor	**Dilijan**	**Margahovit**	**Fioletovo**
Socio-economic indicators				
Permanent residents	4525	6813	3551	1279
Male	2096	3423	1794	646
Female	2429	3390	1757	633
Preschool age (0-6 years)	383	299	315	108
School age (7-17 years)	604	890	835	154
Middle age (18-63 years)	3195	4389	2297	890
Over 63 years	389	760	525	127
Number of the households	1027	1995	1376	365
Agricultural indicators				
Arable lands [ha]	758	743	440	25
Pastures total [ha]	8317	7209	3830	135
Remote pastures [ha]	550	5879	2840	950
Community pastures [ha]	7767	1330	990	194
Land plots [ha]	163	388	387	119
Hay meadows [ha]	2000	1125	1800	50
Cattle [heads]	3299	1686	1901	1640
Small ruminants [head]	3760	343	1575	280
Pigs [head]	90	933	295	-
Municipal / Community finance indicators				

2016 budget [US$]	249,624	1,280,898	172,894	112,545
2016 budget, gov. subsidy [US$]	86,566 (34.7%)	903,483 (70.5%)	65,060 (37.6%)	42,778 (38%)
2017 budget [US$]	250,554	1,469,888,	123,345	97,267
2017 budget, gov. subsidy [US$]	131,741 (33.7%)	901,235 (63.3%)	50,919 (41.3%)	42,778 (43.9%)
% directed to salaries	52.9%	17.3	30.2%	39.6%
% directed to environment	3.7%	10.3	2.7%	-

Projected climate change effects in the priority areas and adaptive capacity

21. Current long term climate trends for the Ararat Marz, where Khosrov Forest State Reserve is located, and Tavush Marz, where Dilijan National Park is located, point at increased summer temperatures and reduced overall precipitation in line. This is expected to further increase in line with the overall projected climate trends for Armenia for the year 2100.

i. Communities adjacent to Khosrov Forest State Reserve. From 1935 to 1996 average annual temperature increased by 0.40C, from 1935 to 2007 0.85 0C, from 1935 to 2016- 1,030C. Whereas in 1935-2016, the average summer temperature rose to around 1.10C and the winter was 0.40C. From 1935 to 1996 6% of the average annual precipitation was recorded, and by 10% in 1935-2016. Late spring and early autumn frosts, strong frosts observed in winter and strong winds are mainly due to Scandinavian anticyclone, the frequency of which has increased by 71%, which indicates that the repeatability of hazardous meteorological phenomena also increases in the area. The number of cases of Iranian anticyclone formation has increased by about 63% in the area. As a result heat waves repeatability increased as well as the average duration of dry spells.

ii. Communities adjacent to Dilijan National Park. From 1935 to 1996 the average annual temperature has increased by 0.30C, from 1935 to 2007 - 0.650C, during 1935-2016 - 0.950C. Whereas in 1935-2016, the average summer temperature has risen to around 0.850C, and the winter temperature - 0.20C. In 1935-1996 the average annual precipitation has decreased by 5%, and from 1935 to 2016 about 9%. Late spring and early autumn frosts, strong winter frosts, strong winds are mainly due to Scandinavian anticyclone, whose frequency has increased by 31%, which indicates that there is a certain increase in the area's repeated meteorological phenomena. The average number of dry days following each other has increased by 3 to 21 days.

22. The vulnerability of the target communities to climate change is driven by (i) land and bio-diversity degradation and marginal production systems, (ii) weak infrastructure, water inefficient irrigation systems and limited climate technology adoption and (iii) poverty, lack of alternative income opportunities putting additional pressure on natural resources. Community pastures are 3-9 km away from the community, which are used by cattle breeders from March to late November. Shift grazing is not used at all. In many areas there are no watering points, as a result of which animals have to cross-large areas for drinking water. Since remote pastures are often not used due to the poor condition of the roads and the inadequate social conditions of the majority of the residents, the whole load falls on the community pastures. Due to global warming, low rainfall in summer and prolonged high temperatures the pastures are not able to recover after grazing. This is by the fact that from early spring to late autumn continuous grazing does not allow plants to undergo generative development and restore the area through seeds. Pastures near the community are extremely degraded. Topsoil with high soil organic carbon has diminished and the vegetation got poorer. In these conditions many types of dry-resistant plants are intensively spreading that are not eaten by animals. Animals have to cross vast areas and additionally contribute to the strengthening of degradation. The adaptive capacity of pastures has severely diminished and is expected to be further reduced with progressing climate change. Without any further pasture management measures it is expected that 5 % of community pastures may be further degraded and transformed into unproductive landscapes. In the course of the next 10 years nearly 30% of community pastures will likely lose their adaptation potential to climate change and will turn into semi-desert ecosystems if surface improvement measures are not undertaken.

23. This has in return significant effects on the population's living standards. Reduction in incomes from agriculture and cattle breeding does not allow part of the residents to use enough gas and electricity for household needs. Wood and dried manure is used as a fuel. Under these conditions there are two main negative results.

    - The pressure on the forest ecosystem increases, as a result of which the climatic and water absorbing properties of the forest decrease. As a result of felling clearings, light forests, not valuable shrubs non-specific to ecosystem emerge where the sprouting of seeds of special tree species and the development of the new forest are worsening. The ecosystem is gradually weakening and losing its adaptive capacity to climate change.
    - The use of organic fertilizers in agriculture decreases. Gradually, the quality of soil degrades and often they are out of cultivation, turning into semi-desert or very sparse grasslands.

24. At the same time, illegal activities—such as logging, grazing, and gathering of useful plants—occur between the two protected areas in the impact zone of the community, due in large part to high levels of poverty and low-level of knowledge on the values of protected areas. As a result of these and other illegal activities, vegetative cover is degraded, decreasing overall ecosystem resilience to climate change. Since the specially protected nature areas are important areas for enhancing ecosystem and landscape resilience to climate change and have environmental, social, health and great scientific value, the establishment of effective cooperation and further development between the communities and organizations implementing protected area management is highlighted and will increase the adaptation level of protected natural ecosystems. At the same time it is clear that it is not possible to enhance efficiency of specially protected nature areas without improving social conditions of communities' population and implementation of operations on increasing community awareness on the importance of protected areas. This is especially important for women living in poverty, as they do not have the same access and opportunities as men to alternative forms of income generation, and could be participating in illegal activities for household subsistence. Communities must be considered not as impeding but contributing factors to protected area.

25. Community self-governing bodies are unable to provide adequate financial resources to promote and implement adaptation measures as well as energy efficient technologies and value chain diversification (solar water heaters installation, construction of modern greenhouses with lightweight constructions of fruit and vegetable seedlings, solar water heaters, etc.) and support measures for sustaining agriculture and livestock production (irrigation system repairs, diversification of agriculture, reconstruction of waterway roads, construction of watering points in pastures, etc.) enhancing the stability of natural ecosystems and agricultural landscapes and increase of product volumes. Table 4 provides an overview of the 2016 and 2017 budget situation of the communities. Analyzing the budgets of the all communities in the project, it shows that the budgets are composed of communities' own revenues and government subsidies.

Project / Programme Objectives:

List the main objectives of the project/programme.

26. 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.

27. 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:

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.

Project Components	Expected Outcomes	Expected concrete outputs	Amount (US$)
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 LDN 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*			**193 320**
5. Total Project Cost			**2.468,900**
6. Project Cycle Management Fee charged by the Implementing Entity (if applicable)			**37 100**
Amount of Financing Requested			**2 506 000**

* Copyright and technical supervision includes midterm and final external monitoring of the project, midterm and final external audit, midterm and completion missions of the AF experts.

Projected Calendar:

Indicate the dates of the following milestones for the proposed project.

Milestones	Expected Dates
Start of Project/Programme Implementation	2018
Mid-term Review (if planned)	2019
Project/Programme Closing	2020
Terminal Evaluation	2020

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

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.*

Approach and objectives

28. The **objective** of the project is to reduce the climate risk vulnerability of local communities living adjacent to the "Khosrov Forest" and "Dilijan" National Parks by strengthening the adaptive capacity of the agricultural sector and reinforcing their institutional and planning capacity for climate change adaptation by implementing adaptation measures in selected communities.
29. The proposed project will develop adaptive strategies in response to climate change effects on the agricultural and natural landscapes. It will sustainably strengthen livelihoods of affected communities including with considerations to not exacerbate marginalization of vulnerable communities without furthering land degradation by introducing climate smart agricultural technologies, improving the value chain of targeted products and strengthening their planning capacity to increase the adaptive capacity of the local communities. The project seeks to include the priorities and participation of vulnerable communities, including women, poor households, etc, to ensure the project empowers these communities and does not exacerbate existing inequalities, as well as brings together the concepts of land degradation neutrality and climate change adaptation.

30. The project would focus on three main adaptive strategies: (i) adaptation of agro-ecological landscapes and maintaining agricultural productivity under increasing climate change, (ii) sustaining climate smart agricultural value chains through the promotion of low cost, energy saving technologies and (iii) improved planning capacity of local communities and reinforcing their local adaptive capacities. The project would thereby be an important building block toward land degradation neutrality (LDN).

31. The project is organized into three main components with three primary outcomes. Component 1 of the project will focus on community-based, equitable and gender-responsive interventions for strengthening the adaptive capacity of the agricultural sector. Component 2 will support climate smart agricultural value chains. Component 3 covers topics regarding capacity building, awareness, local training, as well as knowledge and information management, and to facilitate information to strengthen national strategies and policies on climate change adaptation. The main project interventions will be implemented in the adjacent communities of "Khosrov Forest" State Reserve and "Dilijan" National Park.

32. The project concept has been developed taking into consideration both the Adaptation Fund policies and the best international practices. During the formulation of the concept note, community consultations were held in all target communities allowing a participatory planning and formulation of priority interventions for climate change adaptation. Questionnaires and other data were collected and community meetings held to identify the key factors that could adversely affect the adaptation of natural ecosystems and agricultural

landscapes and to formulate the priority interventions for each community. Ecosystems and communities' adaptability measures are primarily aimed at adapting to climatic emergencies (high and low temperatures, dry and hot winds, spring and autumn frosts, strong hails and rains, increased air temperature, etc.).

33. It is a pilot or incubator project, which is aimed to be scaled-up along vulnerable areas and buffer zones of protected areas and forests in Armenia and test relevant models. The project follows thereby a bottom up and community focused approach, with local action defined, prioritized and implemented by the vulnerable communities, including with equal participation from women and men.

Project Components

34. Component 1: Community based, climate smart agricultural practices in degraded areas and buffer zones:

The component aims to increase the adaptive capacity through promoting climate smart agriculture and developing activities that promote restoration of natural ecosystems, water and soil conservation, organic agriculture, low cost technologies, and improved livestock forage quality. It further aims to strengthen the adaptive measures that improve livelihood and the social conditions of the target population. This component targets all local producers (mainly micro and small scale producers) located in the project areas that are highly vulnerable to extreme hydro-meteorological events and to gradual climate change effects. The interventions are supported by local capacity building (authorities, farmer associations, civil society organizations, and the private sector) in climate risk management, through community based adaptation and empowerment of local producers by increasing their capacity to deal effectively with the impacts of climate change. 1.

35. 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:

Component 1 addresses critical adaptation issues in the crop, livestock and forestry production systems and natural habitats in the target communities adjacent to Khosrov Forest State Reserve (1 community) and Dilijan National Park (3 communities). (Details on the production systems, livelihoods and adaptation challenges in the target communities are provided above.) The project will establish demonstration sites (on community land, schools and community champions) in the four targeted communities, provide training on specific farming practices through training of trainers and community champions, provide farm inputs and material (e.g. seed and seedlings of drought tolerant crops), rehabilitate community infrastructure notably and directly support the most vulnerable communities. All activities will be planned and implemented in a participatory, bottom up approach by the local communities with the support of extension services and external partners, where necessary prioritizing the equal participation of marginalized groups, including women, youth, poor households, in these opportunities. It is expected that the activities will be further rolled out in all parts of the communities and other vulnerable communities adjacent to protected areas in Armenia.

36. Taking into account current and projected climate change scenarios a project concept aimed at increasing the level of adaptation of natural ecosystems and agricultural landscapes has been developed based on the following interrelated chain of events:

1. Adaptation level of degraded natural ecosystems could be raised by restoring their integrity,
2. The level of adaptation of natural ecosystems can be increased by reducing anthropogenic pressure on them,
3. The level of adaptation of natural ecosystems can be increased by their proper exploitation and conservation,
4. The level of adaptation of agricultural landscapes can be increased through efficient irrigation water management and the introduction of the latest technologies in agriculture,
5. The level of adaptation of natural ecosystems and agricultural landscapes is more effective when it is combined with measures to improve the livelihoods of the population,
6. Increasing the effectiveness of the conservation of specially protected natural areas is possible by improving the socio-economic situation of the adjacent communities.
7. The adaptation of ecosystems and agricultural landscapes to climate change contributes to multiple benefits, including its commitment to land degradation neutrality

Summarizing the results of studies and proposals from communities the program has focused on the main activities that the majority of the population believes can contribute to achieving the program objectives. Clearly, during the concept development phase it was impossible to calculate and discuss all alternative measures that would contribute to the conservation of project's outcomes.

The project will focus on developing a broader spectrum of actions as a number of professionals of the sector will be involved in this stage. It is expected that there will be new more effective proposals, as well as innovative changes for already proposed actions.

It is clear that anthropogenic pressure on other areas will increase causing decrease in ecosystem adaptation to climate change. This will spread by a chain reaction principle on other ecosystems and landscapes reducing their sustainability and adaptation potential.
In its turn land degradation will lead to a decrease in water resources and a reduction in adaptability of other agricultural sectors.

Adapting ecosystems and landscapes to the adverse effects of climate change can only be achieved through the implementation of complex measures. This should include not only improvement of the social conditions of women and men in the population, enhancement of agricultural productivity, foreseeing of financial resources for environmental measures in the community budget, planting of heat-tolerant crops considering the optimal use of irrigation water, but also enhancing adaptability to disturbed ecosystems.

37. The project aims at implementing a number of activities and would introduce the following adaptation measures:
    - **Increase water use efficiency** to address projected climate change induced reduction in water availability and makes crop production systems less vulnerable to climate change

impacts, through the rehabilitation of irrigation systems, introduction of drip irrigation and promotion of water and climate smart agricultural practices.

- Renovation of main irrigation water supply systems, where water loss reaches up to 80%. The demand of water for irrigation is a critical element to maintain important crops along the marz. Besides the area is highlighted by the scarcity of water. The anticipated change will save water, the irrigated area will be expanded, will promote diversified agriculture and crop yield will be increased thus increasing the incomes of the population.
- Establishment of drip irrigation intensive orchards in communities. This system will also save water, new orchards will be created, soil degradation will be prevented, saved water will be used for the irrigation of new lands, new fruitful orchards will be established thus increasing populations' income

- **Increase soil organic carbon** through (i) promotion mulching, reduced tillage, compost management, prevention of soil erosion and rehabilitation of soils and measures for reducing soil erosion (ii) the establishment of agroforestry systems on degraded slopes and (iii) prevention of erosion of slopes by the planting of dry-resistant species, as well as berries of high demand in the market.
- Introduce and promote more **heat and drought resistant pasture crops** and **climate smart livestock management** while providing better access to remote pastures (including rehabilitation of rural community field track) to **reduce pressure on community pastures**, increase pasture rotation and rehabilitation of livestock watering points. Rehabilitation of community pasturelands and grasslands by means of surface improvement and construction of livestock watering points. This activity will undertake improvement of the management of natural grasslands and hay meadows in the project area, including rehabilitation of hay meadows, indigenous reseeding, rotational grazing and restoration of degraded pasturelands, construction of livestock watering points and re-introduction of forage legumes into crop rotations. Stock watering points will be located to make better use of pasture resources to utilize pastures, which are underused because of lack of drinking water for lives.
- **Improve fodder management** through the establishment of sowing areas of perennial plants (lucerne, sainfoin) to create a sustainable base for fodder. This activity will extend the wintering period of livestock and will promote degradation of adjacent pasturelands, as well as this will increase the fertility of the soil.
- Improve **agricultural micro-climate** through the promotion and rehabilitation of agro-forestry systems in targeted degraded slopes areas. Prevention of erosion of slopes by the planting of dry-resistant species, as well as berries of high demand in the market.
- Promote more **drought and salinity tolerant crop/pasture** varieties and **establish seed banks** with drought tolerant crop seeds and easy access of local communities to those seeds;
- Promote information sharing, **farmer field schools** and the promotion of global best practices;
- Strengthened monitoring system for climate smart agriculture, land degradation neutrality, forest and ecosystem adaptation;

38. The following concrete outputs have been formulated for this component.

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;

Output 1.1: Irrigation water supply systems are rehabilitated increasing water use efficiency;

Urtsadzor Community

The lands within the administrative territory of Urtsadzor village of Urtsadzor community are envisaged to be irrigated with the water resources of Vedi reservoir, the construction of the dam and ancillary structures of which started in 2017 and will be completed by the mid 2020. Exploitation of the reservoir will allow saving 18 million cubic meters of water resources of the Lake Sevan.

The project on the construction of the reservoir and irrigation system costing 90 million Euros is implemented through the loan funded by the French Development Agency and co-funded by the Government of Armenia.

Vedi reservoir is located in Ararat marz. The reservoir is fed by Vedi and Khosrov rivers. The total volume of the reservoir is 29 million m^3, while the height of the dam is H = 72 m. It will be possible to irrigate an area of 3200 hectares.

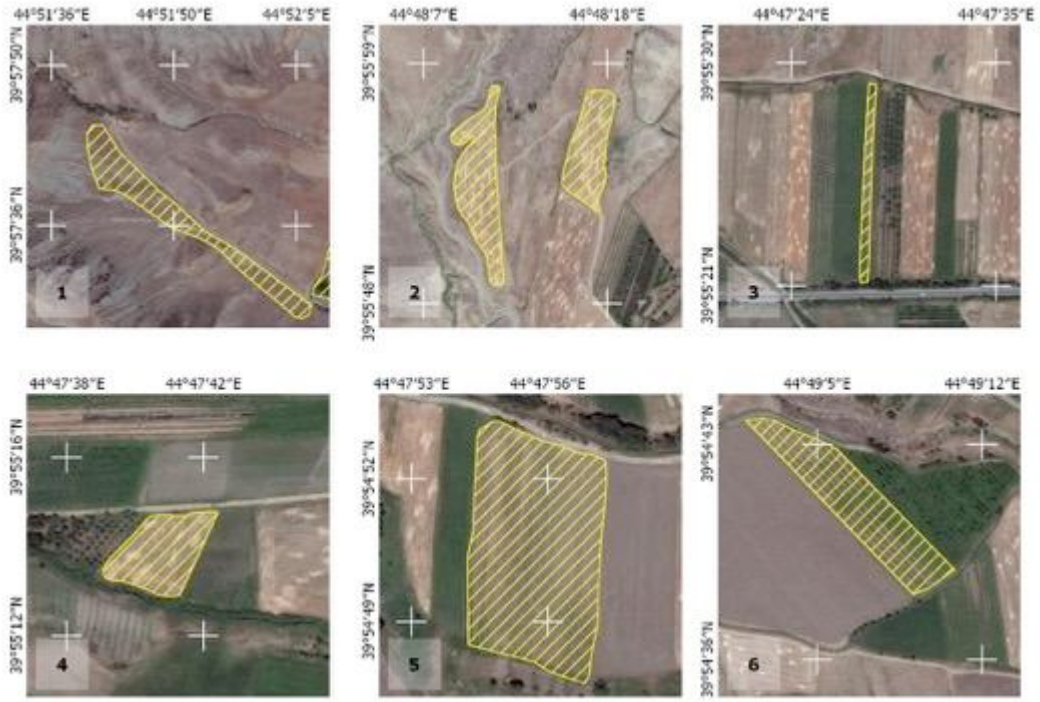
The goal of the project is to improve the sustainability of water resources and irrigated agriculture through the rehabilitation and modernization of irrigation networks in the Ararat Valley. The project aims at reversing the tendency of abandonment of agricultural land in the Ararat Valley through elimination of restrictions imposed by water and irrigation networks.

The following works will be carried out on irrigation networks within the framework of the project:

- Construction of branches to the main canal that will connect the pressure pipe to the network, thus ensuring the pressure networks;
- Repair of dam-fed irrigation system's damaged parts and reconstruction of the secondary and tertiary canals;
- Expansion of the irrigation network;
- Decommission of the existing pumping stations;
- Establishment of pilot areas equipped with efficient irrigation equipment to demonstrate the technologies to the farmers and, thus, modernize the agricultural processes in the area.

Based on the above mentioned, some changes have been made to the administrative area of Urtsadzor community. Only orchards with drip irrigation system are planned to be established.

Irrigation Improvement Areas of Urtsadzor Village



Shaghap administrative area of Urtsadzor community

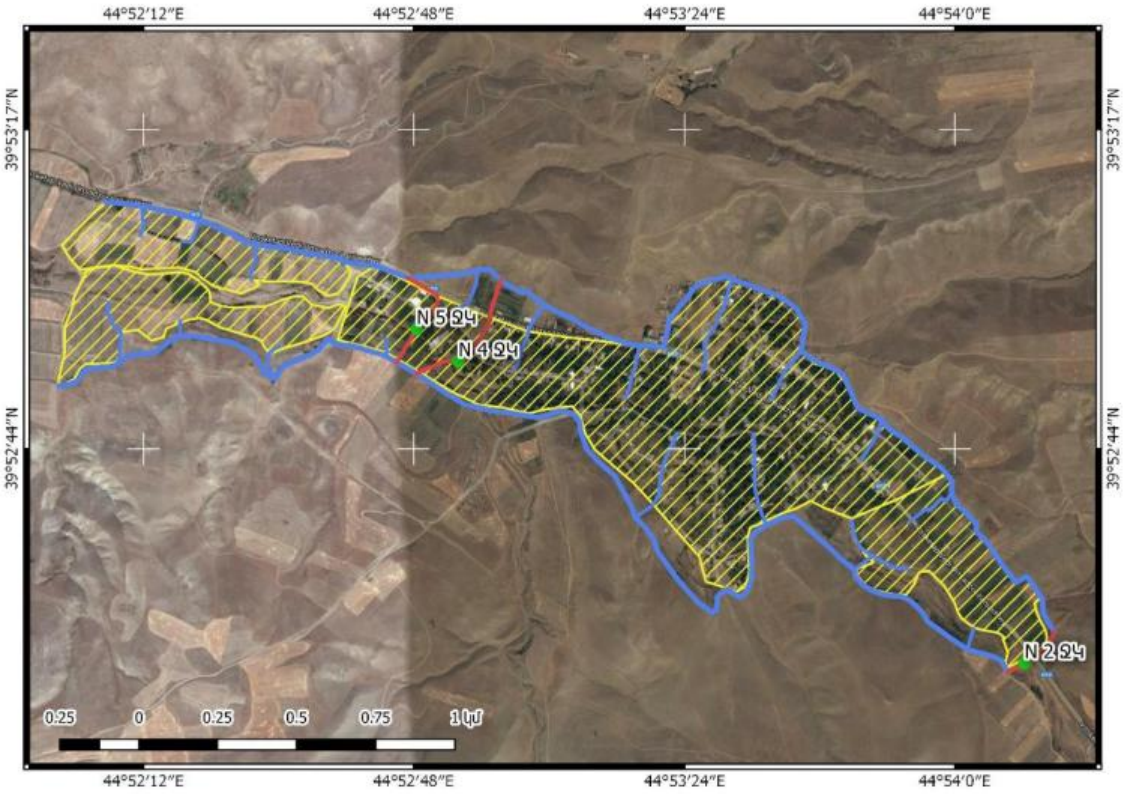
This administrative area is not included in the impact zone of Vedi reservoir and most of the land is not cultivated. The following activities are planned to be implemented in the area:

1. Improvement of irrigation network:

From the five observed pumping stations three were selected for the improvement of irrigation in Shaghap village. The first PS was not selected because of unstable water yield, while the second was not selected, as only the building was present. Thus, the main water sources are the second, fourth and fifth pumping stations (Figure 1.1) that will be improved.

Figure 1.1

Scheme of the irrigation improvement site of Shaghap village



The targeted irrigation area is about 120 hectares. It is envisaged to equip the existing pumping stations with solar panels, as well as to improve the conduits. Equipment and activities for irrigation improvement are presented in Table: 1.1

Table: 1.1

N	Equipment
1.	Culverts of different diameters (D = 100 mm, D = 40 mm)
2.	Culverts separator D = 100 mm
3.	Crossing parts for culverts from 100 mm to 40 mm
4.	Valve D = 40 mm
5.	Diesel fuel
N	Activities
1	Installation of irrigation system
2.	Purchasing and installation of solar batteries
3.	Transportation costs
4.	Design works
Contingency costs 6**%**	
Total	

Dilijan community

Though Tavush marz where Dilijan community is located has a relatively mild climate as compared to Ararat marz, the establishment and further care of orchards is impossible without irrigation. Taking into account the abovementioned, it is envisaged to build an irrigation system, in case of establishing fruit orchards in the community. Equipment and works for the construction of irrigation network are presented in Table1.2.

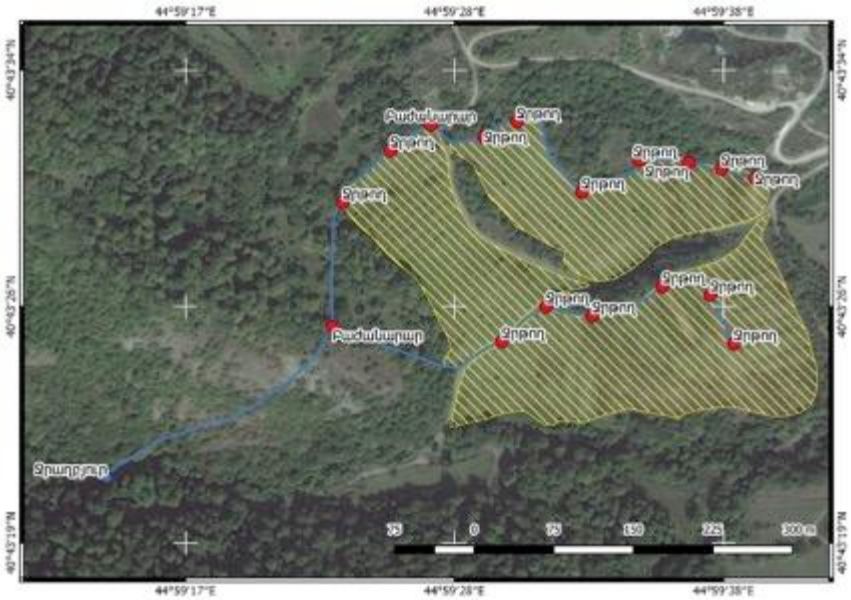
Table: 1.2

N	**Equipment**
1.	Culverts of different diameters
2.	Culvert separators and discharge valves
3.	Crossing parts for culverts
4.	Parts connecting polyethylene culvert to metal tube
5.	Valves
6.	Metal disk
7.	Metal for intake-valve system
8.	Wire wiper disc
9.	Cement
10.	Sand
11.	Electrode 4 mm
12.	Paint, soil, solvent
13.	Diesel fuel
N	Activities
1	Construction of captation structures
2.	Earthwork
3.	Installation of irrigation system
4.	Transportation costs
5.	Design works
6.	Water Use Permit
Contingency costs 6%	

All the basic equipment and activities required for these operations have been clarified by the experts at the development stage of the project. The expenditures associated with the activities have been calculated serving as basis for calculation of the project budget. Contingency costs of 6% have been included in the budget, due to some possible deviations in equipments, list of activities and prices during the implementation of the project.

It will be possible to establish fruit orchards after the construction of the irrigation network.

Irrigation Scheme in Khachardzan Village



Irrigation Scheme in Gosh village

Irrigation Scheme in Dilijan city

Establishment of fruit orchards would contribute to the employment and income generation of the community population, as well as has an ecological significance, while the establishment of agro-forests would contribute to the restoration of degraded lands and would have an anti-erosion, soil conservation and ameliorative significance.

It is planned to establish about 5.2 hectares of apple, pear, quince and peach orchards in the territory of Urtsadzor community of Ararat marz. It is also envisaged to establish 5 hectares of semi-dwarf walnut orchard in Dilijan village of Tavush marz, 4 hectares of semi-dwarf apple and pear orchard in Gosh village, 1.4 hectares of mulberry, blackberry and raspberry orchards / planting material will be provided to the residents for the cultivation of household plots/ in Aghavnavank, 0.2 hectare of strawberry and 0.5 hectare of semi-dwarf walnut orchard in Khachardzan village, 2 hectares of semi dwarf walnut and hazelnut, 0.5 hectares of apple and pear orchard and 0.5 hectares of berry orchards in Haghartsin village and 2.0 hectares of semi dwarf walnut and hazelnut orchard in Teghut village. Overall 6.1 km of irrigation network will be bult and repaired.

In Margahovit community of Lori marz, it is envisaged to establish 0.5 hectares of mulberry and blackberry orchards /planting material will be provided to the residents for the cultivation of the residential lands/, and 0.1 hectare of strawberry orchard in Fioletovo community /planting material will be provided to the villagers for cultivation in the residential lands/.

It is important to use the drip irrigation system in Ararat marz and ditch irrigation in Tavush marz to save water in the newly established orchards.

The activities aimed at the establishment of fruit orchards are presented in Table: 1.3

Table:1.3

№	Title of the activity	Agrotechnical period

1.	Removal of stones, shrubs and scrubs from the plot	Autumn
2.	Preparation of the layout	Autumn
3.	Road smoothing	Autumn
4.	Preparation of irrigation ditches	Autumn
5.	Acquisition of seedlings	Spring or autumn
6.	Transportation to the area	Spring or autumn
7.	Preparation of planting pits /50kg deep / and planting of seedlings /50m depth/	Spring or autumn
8.	Irrigation after planting	Spring or autumn
9.	Purchase and transportation of planting material to the area for the purpose of supplementation	Spring
10.	Replacing dead trees with new seedlings	Spring
11.	Watering	Immediately after planting
12.	Irrigation during vegetation	Spring-Summer-Autumn
13.	Contingency costs *6***%**	

Output 1.2: Water efficient drip irrigation systems are installed in selected community orchards;

The main drip irrigation works are envisaged to be carried out in Urtsadzor community, where climate change has caused problems with irrigation water.
Overall, the irrigation of 5.2 hectares of orchards established in this community is envisaged to be carried out by drip irrigation. Works will be carried out in 2 directions.

1. Already established orchards where irrigation water deficit is observed during the last 5 years. A drip irrigation system will be built that will allow to effectively use the constantly decreasing volumes of water.
2. Establishment of new orchards with drip irrigation. Fruit orchards will be established in the areas that are currently not being cultivated due to scarcity of irrigation water.

Urtsadzor community, administrative territory of Urtsadzor village

Selected land plots are located within the impact zone of Vedi irrigation improvement project and will soon have a closed irrigation system that allows the water to reach up to the upper zone of the land plots. The farmers should bring the irrigation water to their arable lands and orchards at their own expense. Our task in this village is to introduce the drip irrigation system, which will operate until the construction of Vedi reservoir and will be connected to the general irrigation system by the villagers in the future.
Equipment and works for drip irrigation are presented in Table 1.2.1.

Table: 1.2.1

№	Equipment
1.	Culvert with drip cocks
2.	Culverts
3.	Stoppers
4.	Drip cocks
5.	Separator
6.	Crossing parts
7.	Valves
8.	Water filters
9.	Water tank connector parts
10.	Water tank
11.	Metallic crutches
12.	Diesel fuel
13.	Metal disks
14.	Electrode
15.	Paint, soil, solvent
16.	Water supply pipes
№	*Works*
1.	*Installation of a drip system*
2.	*Installation of water supply pipe*
3.	*Transportation costs*
Contingency costs 6 **%**	

Dilijan community, administrative area of Aghavnavank village

It is planned to establish a berry orchard in an area of 0.4 hectares and build a drip irrigation system. Since there is already a water tank and culverts are installed, only installation of water filtration system and drip cocks is necessary to be carried out. The works are presented in the Table 1.2.2.

Table: 1.2.2

N	Equipment
1.	Culvert with drip cocks
2.	Stoppers
3.	Drip cocks
4.	Separator
5.	Crossing parts
6.	Water filters
7.	Valves
10.	Metallic disks
11.	Electrode
12	Paint, soil, solvent
№	*Works*

1.	*Installation of a drip system*
2.	*Transportation costs*
Contingency costs 6 **%**	

All the basic equipment and activities required for these operations have been clarified by the experts at the development stage of the project. The expenditures associated with the activities have been calculated serving as basis for calculation of the project budget. Contingency costs of 6% have been included in the budget, due to some possible deviations in equipments, list of activities and prices during the implementation of the project.

Output 1.3: Existing field tracks to remote pastures degraded lands are rehabilitated:

Numerous meetings with local community heads and residents were organized aiming to clarify the condition of the field tracks subject to repair. The field surveys results helped identifying current state of the field tracks leading to pastures, hay meadows, orchards and arable land and the necessary measures at the next stage. Schematic plans for these areas were drawn up with the mapping expert included in the program, while the possibilities of improving the natural and agricultural ecosystems of each community and the expediency of repairing the field tracks were studied by the agronomist.

The priority is the repair of field tracks leading to natural ecosystems, which will reduce the pressure on natural and agricultural ecosystems adjacent to communities.
According to the results of the study it was found out that the field tracks are divided into 4 types according to their degree of damage and physical properties of the soil. Repair works have been developed for each type.

Type 1.

Envisaged activities

№	**Title of the work**
1	Road smoothing with a bulldozer
2	Construction of roadside rainwater drainage culverts with a machinery, lateral filling
3	Installation of metallic culverts crossing roads for rainwater discharge
4	Soil backfill
5	Soil compaction with watering

Type 2.

Envisaged activities

№	**Title of the work**
1	Road smoothing with a bulldozer
2	Construction of roadside rainwater drainage culverts with a machinery, lateral filling
3	Installation of metallic culverts crossing through road for rainwater discharge
4	Filling of a 20cm thick sand-rubble layer and compaction

Type 3.

Envisaged activities

№	**Title of the work**
1	Road smoothing with a bulldozer

Type 4.

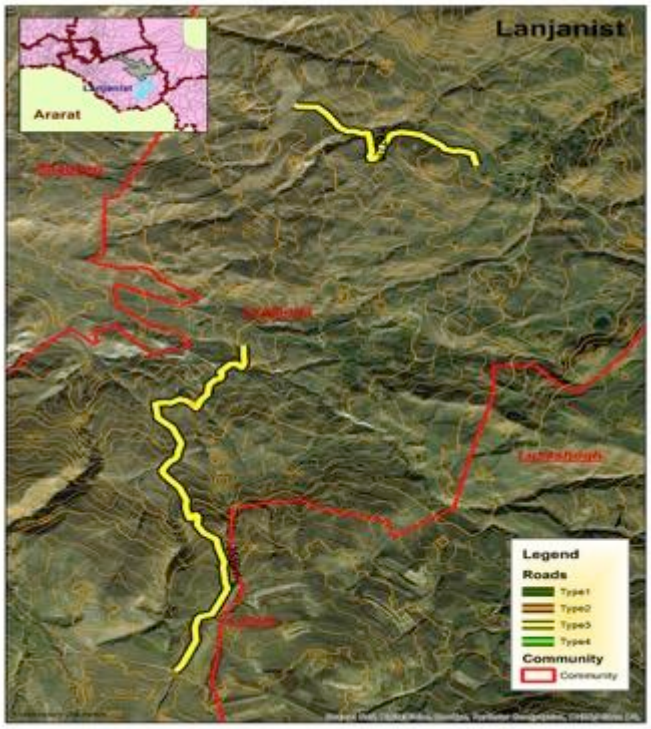
Envisaged activities

№	Title of the work
1	Extraction of 40-60 cm thick topsoil
2.	Filling with imported soil
2	Construction of roadside rainwater drainage culverts with a machinery, lateral filling
3	Installation of metallic culverts crossing through road for rainwater discharge
4	Filling of a 20cm thick sand-rubble layer and compaction

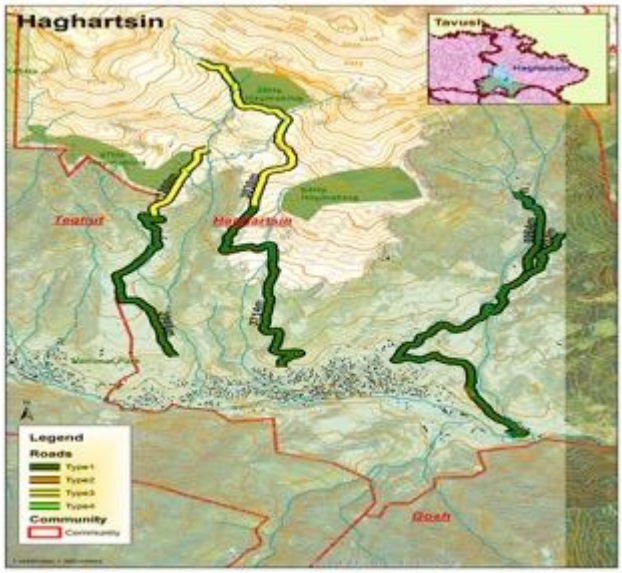
Experts have studied more than 80,0 kilometers of field tracks within the project area, including 18,25km in Urtsadzor community, 44,5km in Dilijan community, 9,5km in Fioletovo community and 9,44km in Margahovit community. It is envisaged to carry out renovation works only on 39.5 km length sections of the road based on the results of study on the road sections. This will result in complete usage of more than 82 kilometers of roads. 50 pipes for snowmelt and rainwater disposal will be installed.

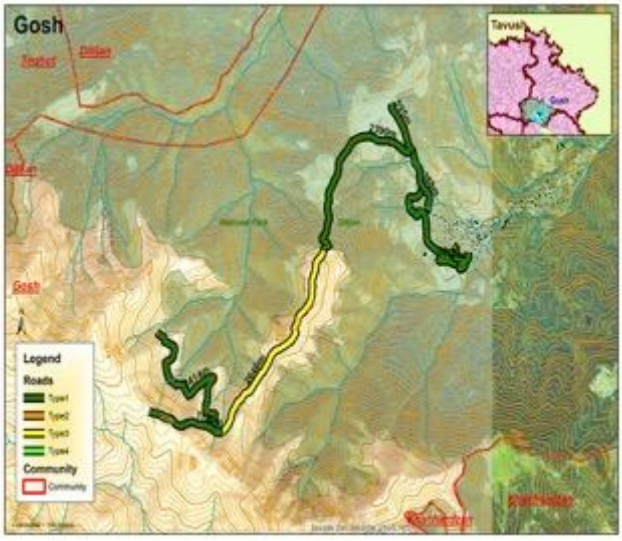
All the basic equipment and activities required for these operations have been clarified by the experts at the development stage of the project. The expenditures associated with the activities have been calculated serving as basis for calculation of the project budget. Contingency costs of 6% have been included in the budget, due to some possible deviations in equipments, list of activities and prices during the implementation of the project.

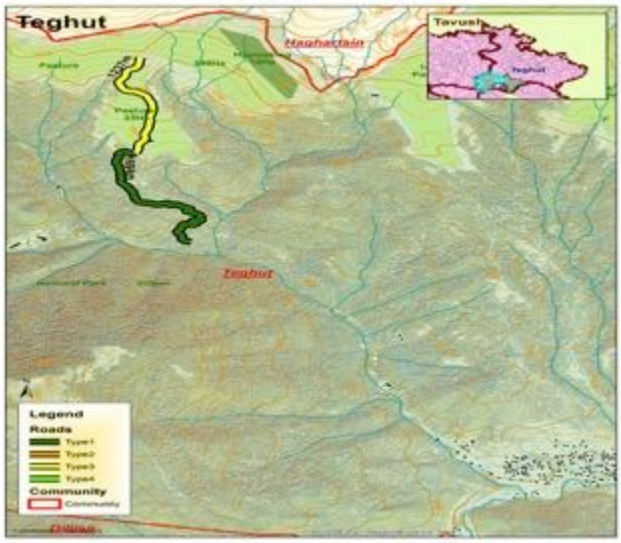
Urtsadzor community

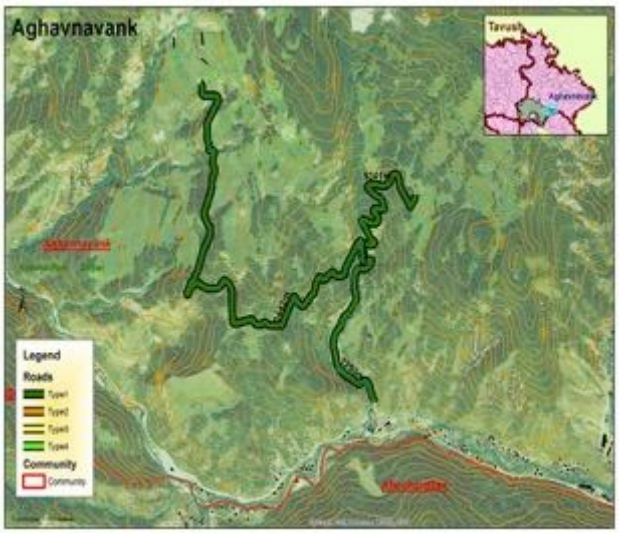


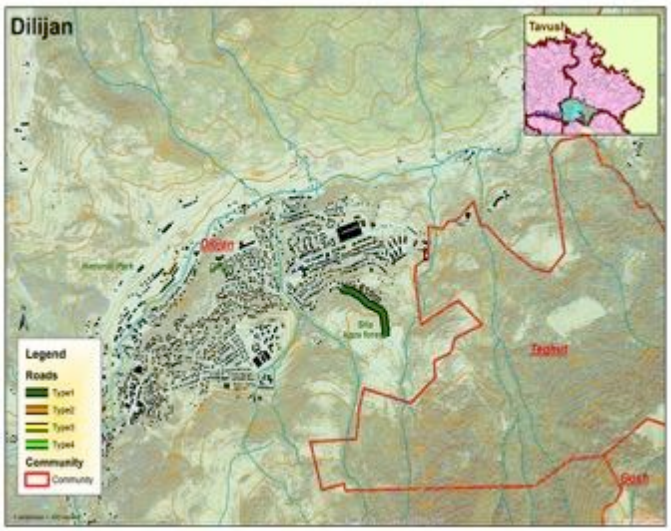
Dilijan community



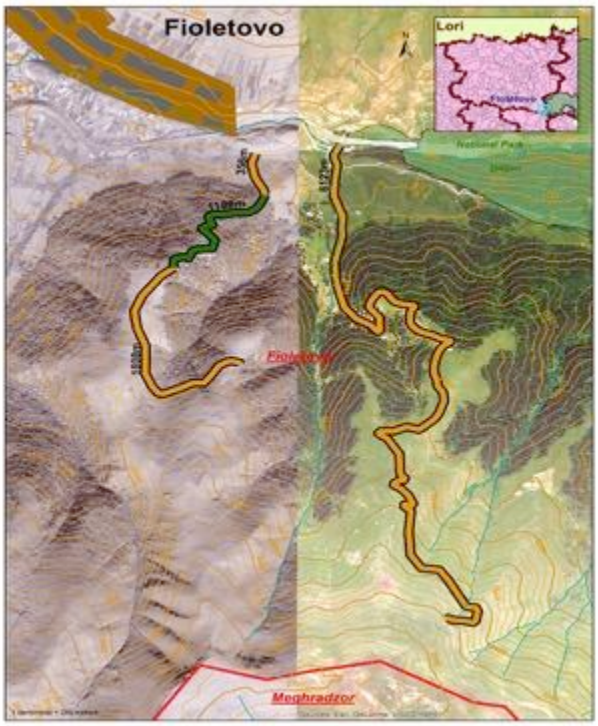

Gosh
Legend
Roads
Community

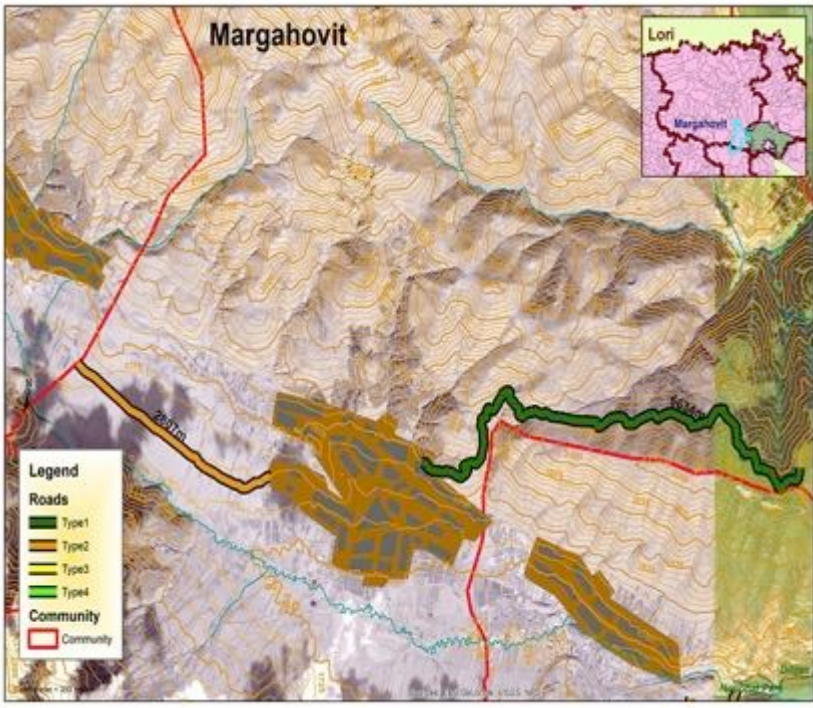

Teghut
Legend
Roads
Community


Aghavnavank
Legend
Roads
Community


Dilijan
Legend
Roads
Community

Fioletovo community **Margahovit community**

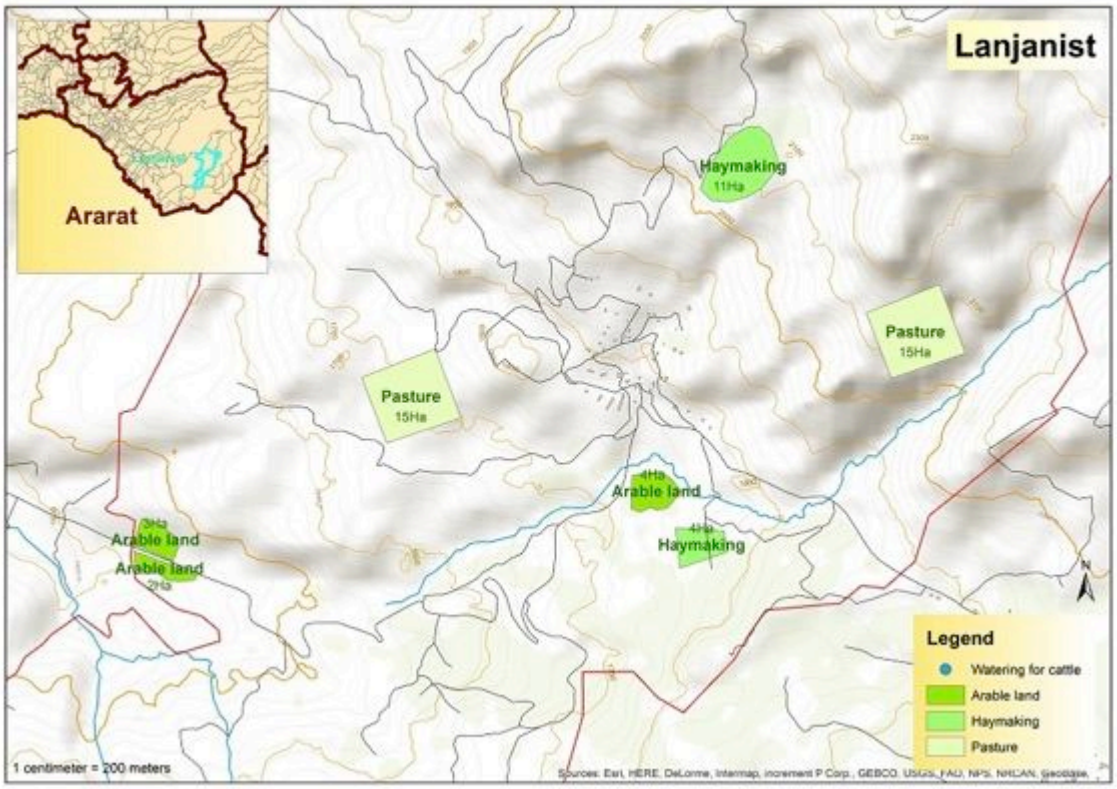




Output 1.4: Sowing areas of perennial plants are created reducing rangeland degradation;

These works are planned to be implemented in the village of Lanjanist of Urtsadzor community. Over the past 20 years, residents have left the village because of lack of irrigation water. Arable land and orchards are not cultivated. Residents are engaged in cattle breeding, mainly using community pastures. Residents of Shaghap and Urtsadzor villages also use these pastures. Pastures and hay meadows which are relatively far from the village are not used because of the bad field tracks in the area. The micro-climatic conditions of the village do not allow for the cultivation of the sweet clover in arid conditions non-cultivated arable lands. This measure will somehow contribute to the improvement of livestock forage provision during winter season and prevention of arable land degradation. It is planned to plant 10 hectares of sweet clover for the purpose of raising soil fertility and establishing a stable forage base. It was explained to the residents that when they are convinced on their own experience that sweet clover is a highly productive perennial crop, they can allocate some areas for the production of seeds.

1. Autumn 25-30 cm deep tillage with a tractor
2. Spring 15-20cm deep cultivation with a cultivator
3. Spring seed sowing with a seed drill.



Output 1.5: Community pastures and hay meadows are rehabilitated and improved their adaptive capacity

The main problem of development of livestock breeding sector is conditioned by the organization of production of high quality forage and the formation of a stable forage base. The significance of the natural hayfields (meadows, pastures) is the most important in establishing forage base. Herbage can ensure the receipt of more than 60% of the forage demand and around 70-75% of digestible protein by agricultural animals per year. The increase of the overall productivity of agricultural animals in the pasture period, in particular, the increase in dairy and milk quality is conditioned by this circumstance. The main part of livestock products (about 60-70% of the annual milk) is obtained in the pasture period.

Currently, the main part of the necessary annual forage (about 75-80% of grass and pasture forage) of individual and collective livestock farms derives from natural pastures which is of great importance in the formation of forage base. Despite their importance the biological and economic effectiveness of the natural pastures has dramatically reduced in the past few years in the country and especially in the neighborhoods of the protected areas and is far from being sufficient. The major cause of this is climate change and anthropogenic factors. Degradation of pastures and hay meadows is more pronounced in community areas where indefinable, irregular and abusive use, as well as the care and improvement needed to maintain the vegetation are virtually absent. This is perhaps the main reason why pasture degradation and erosion phenomena has developed and

evolved in almost all the studied communities. The subsequent development of this phenomenon will adversely affect not only the solution of feeding and general productivity problems of agricultural animals, but also can create serious environmental problems, even with irreversible consequences. That is why today's priority is the development and sustainable implementation of community-based pasture management systems that will enable not only addressing issues of conservation and restoration of natural pastures, but also contribute to the creation of forage base and the protection of the environment.

Table: 1.5.1

Agrochemical indicators of agricultural lands of Urtsadzor community (Urtsadzor, Shaghap, Lanjanist)

The name of the community and administrative territory	Depth of soil sampling (cm)	Arable land					Hay meadow					Pasture				
		Humus, %	pH in soil water solution	quantity of available nutrients in 100 g soil (mg)			Humus, %	pH in soil water solution	quantity of available nutrients in 100 g soil (mg)			Humus, %	pH in soil water solution	quantity of available nutrients in 100 g soil (mg)		
				N	P_2O_5	K_2O			N	P_2O_5	K_2O			N	P_2O_5	K_2O
Urtsadzor	0-25	1.4	7.4	3.10	2.85	28.0	1.5	7.5	2.62	2.60	29.0	1.2	7.4	2.16	2.42	27.0
Shaghap	0-25	1.1	7.5	2.75	2.62	27.0	1.2	7.4	2.47	2.60	28.0	1.1	7.6	2.20	2.30	26.0
Lanjanist	0-25	1.2	7.5	2.80	3.4	24.0	1.1	7.4	2.05	2.80	30.0	1.1	7.5	2.37	2.45	28.0
Non-degraded land	0-25	2.3	7.1	5.61	5.25	33.0	1.9	7.0	4.92	4.40	34.0	1.9	7.2	4.65	4.84	32.0

Table: 1.5.2

Agrochemical indicators of agricultural lands of Dilijan and Margahovit communities

The name of the community and administrative territory	Depth of soil sampling (cm)	Arable land			Hay meadow			Pasture		
		Hu m us,	l wa ter	quantity of available	m us,	l wa ter	quantity of available	m us,	l wa ter	quantity of available

				nutrients in 100 g soil (mg)					nutrients in 100 g soil (mg)					nutrients in 100 g soil (mg)		
				N	P_2O_5	K_2O			N	P_2O_5	K_2O			N	P_2O_5	K_2O
Dilijan	0-25	-	-				1.7	7.3	2.86	2.80	31.0	1.4	7.2	2.66	2.72	29.0
Margahovit:	0-25	1.9	7.3	2.95	2.82	28.0	1.8	7.3	2.67	2.85	32.0	1.5	7.2	2.40	2.80	30.0
Non-degraded land	0-25	2.8	7.2	5.91	5.65	35.0	2.6	7.0	5.12	4.75	35.0	2.2	7.1	5.05	5.04	34.0

Table: 1.5.3

Areas subject to improvement were prioritized and selected based on laboratory results and field surveys in communities.

Community	Arable lands subject to improvement/ha	Pastures subject to improvement/ha	Hay meadows subject to improvement/ha	Sowing of sweet clover to ensure sable forage base
Urtsadzor	40	120	7	
Shaghap	27	101	50	
Lanjanist	10	30	14	10
Aghavnavank	-	-	145	
Gosh	-	-	-	
Khachardzan	-	-	-	
Haghartsin	-	108	-	
Teghut	-	472	11	
Margahovit	26	136	85	
Fioletovo	-	-	-	
Total	**103**	**967**	**312**	**10**

Improvement of pastures will contribute to increasing their productivity giving the communities opportunity to focus on the improvement of approximately 520 hectares of pastures.
The improvement of hay meadows will contribute to ensuring livestock forage in winter and early spring in which case these stakeholders will not use pastures in the early spring.
Improvement of arable land will increase crop yield, while the stakeholders will receive additional income, will be able to buy the necessary amount of forage during winter and, as a result, reduce the pressure on the pastures.

The following group of activities is planned within the measures aimed at the rehabilitation and enrichment of degraded community adjacent vegetation cover of 967 hectares of pastures and 312 hectares of hayfield.

1. Purchase and transfer of mineral and organic fertilizers to communities
a) Requirements for mineral fertilizers;
Ammonium nitrate (NH_4NO_3) should contain at least 34.4% nitrogen. It should be packed in 50 kg double-layered waterproof bags. Ammonium nitrate should be supplied in white particles and have high percentage of solubility. It should be 100% free of harmful substances.
Superphosphate should contain at least 17% of total phosphorus. It should be packed in 50 kg double-layered waterproof bags. Superphosphate should have high solubility and be supplied in granular form.
Potassium chloride should contain at least 58% of potassium. Potassium chloride should be of high quality and excellent solubility. It should be packed in 50 kg double-layered waterproof bags. Potassium chloride should have high solubility and be supplied as granular product.
"Organomix" is an ecologically clean, biologically active organic fertilizer, which is a mixture of a biological humus, peat and compost.
Fertilizer requirements:
Chemical Composition:
- Content of organic substances -38-45%
- Total nitrogen (N) 2.5 g / 100 g
- Total phosphorus (P) 0.52g / 100g
- Potassium (K) 1,7 g / 100 g
- Calcium (Ca) 8.2 g / 100 g
- Magnesium (Mg) 0.53 g / 100 g
- Sulphate (SO4) 31000 mg / kg
- PH 7.7

2. Fertilization of pastures and hay meadows
The degradation level of pastures and hay meadows in the communities of Urtsadzor, Dilijan and Margahovit was studied during the field visits. Extensive exploitation of community adjacent areas for grazing by the community dwellers is combined with climate warming and precipitation reduction. These two factors adversely impact the adaptability of these natural landscapes. The selected areas of community adjacent pastures and hay meadows are characterized by less than 10-25% vegetation cover and violated range and percentage relationship of grass cover formed for centuries.

Combined fertilization will include the application of mineral and organic "Organomix" fertilizers to improve not only soil composition and plant nutrition, but also to eliminate the formation of all possible adverse impacts in the environment.
Implementation of complex adaptation measures for the improvement of natural landscapes under conditions of climate change require 2 years. Moreover, the use of mineral fertilizers will be significantly reduced within the second year of the planned activities. The proposed activities are based on the peculiarities and methodologies of pasture monitoring and management systems in the Republic of Armenia, as well as the procedures established in accordance with relevant decisions adopted by the government of the Republic of Armenia on sustainable pasture management (Dec. N1477 from 28.10.2010 and decision N389-N from 14.04.2011)
It is envisaged to carry out the activities through surface improvements. It has been studied and proved that it is best to organize combined fertilization in the early spring during plant regrowth period by applying the fertilizers on the moist soil surface. In this case, grazing should be stopped for 2 months.
It is also acceptable: to organize fertilization in autumn, in which case the plants rapidly grow in the early spring. The fact that grazing in Armenia's pastures continues until late autumn is resulting in poor enrichment of perennial herbs with nutrients and their subsequent poor wintering.
Final fertilization period /spring or autumn/ will be clarified in communities based on the climatic conditions of the year and the recommendations of the cattle breeders. Fertilization of pastures and hay meadows is envisaged to be implemented by scattering fertilizers on the surface of the soil by hand. Mechanized fertilization is not desirable because it will contribute to further degradation of these areas.

3. Purchase of herb seeds and their transportation to communities

Seed requirements
Seeds must be packed in 25-50kg bags. They should be of first reproduction, with no less than 98% of assortment purity, up to 14% of moisture content, weed content not exceeding 0.5%, no less than 80% of germination capacity and disinfected.

In the conditions of Ararat, Tavush and Lori regions it is appropriate to do seed-sowing in early spring or late autumn. In the case of early spring sowing, grazing in the area should be prohibited for 1 year. In the case of late autumn sowing, grazing should be forbidden for 6 months.
Final sowing period / spring or autumn / will be clarified in communities based on the climatic conditions of the year and the recommendations of the cattle breeders.

Enrichment of pastures and hay meadows is envisaged to be implemented by hand sowing. Mechanized sowing is not recommended as it will contribute to further degradation of those areas. Sowing and fertilization activities are envisaged to be combined and simultaneously implemented. In which case, the seeds will mix with "organomix" increasing the germination capacity.
Fertilizers and seeds will be stored in each area with the involvement of community population in fertilization and sowing activities. Workers will be provided with buckets, laces and gloves.
Preparation and implementation of fertilization and sowing will be controlled by a relevant specialist /agronomist /.

Improvement of arable land
The following group of activities is envisaged within the frames of the rehabilitation measures of 103 hectares of degraded arable land.

1. Purchase of mineral and organic fertilizers and transportation to communities

The requirements for mineral and organic fertilizers are described in the section on the improvement of pastures and hay meadows.

Complex measures to increase the adaptability of arable lands in the conditions of climate change are envisaged to be implemented within 2 years. Moreover, in the second year of the activities it is planned to significantly reduce the application of mineral and organic fertilizers.

The amount of phosphoric and potassium fertilizers calculated for the first year is envisaged to be applied in the autumn /October-November/, in the period of deep tillage (25-30 cm) of soil. Nitrogen fertilizer, and organomix are envisaged to be applied in spring, /April/ May/ during the cultivation of soil. The amount of phosphoric and potassium fertilizers calculated for the second year is envisaged to be applied in the autumn of the same year /October-November/, during the deep tillage (25-30 cm) of soil. Nitrogen fertilizer, Cesiolites and Organomix are envisaged to be applied in spring /March-April/, during cultivation of soil.
Fertilization will be carried out in a mechanized manner.

Preparation and application of fertilizers will be resumed by a relevant specialist /agronomist/.
Requirements for Cesiolites;

Cesiolites should be of 24,87-32,36 % porosity with 61-84% water holding capability and adsorption capacity calculated by CaO reaching 150-175 mg per 1 gram. The content of K2O should be 11.0%, CaO content should be 5-6%, the content of content should be 05-0.7%, MgO content should be 0.35%, SiO2 content is 23.0%.
Cesiolites should be of high quality. It should be packed in 50 kg double-layered waterproof bags.

Exposure / Expected Outputs:

Implementation of the planned activities will ensure the following:
1. Increase in the level of adaptation of natural and agricultural landscapes that have been violated as a result of natural and anthropogenic impacts.
2. Prevention of further degradation of natural and agricultural landscapes.
3. Raising the level of knowledge among the population on adaptation measures under the conditions of climate change.
4. Generation of additional income and improving the socio-economic situation.
5. Involvement of the population in the activities aimed at adaptation of natural and agricultural landscapes, increasing public participation in environmental decision-making process.
6. Changing the attitude of the population to the environment.

7. Reduction of anthropogenic pressure on approximately 520 hectares of degraded pastures adjacent to 967 hectares of improved pastures.

All the basic equipment and activities required for these operations have been clarified by the experts at the development stage of the project. The expenditures associated with the activities have been calculated serving as basis for calculation of the project budget. Contingency costs of 10% have been included in the budget, due to some possible deviations in equipments, list of activities and prices during the implementation of the project.

Output 1.6 Livestock watering points are constructed

The construction of a watering point in natural pastures is especially important in the conditions of increasing climate dryness and air temperature in the summer. This will help to:

1. Reduce the movement of the livestock;
2. Decrease degradation of natural pastures;
3. Restore natural pastures;
4. Increase livestock production;
5. Obtain additional income.

It is envisaged to build 3 watering points in Urtsadzor community of Ararat marz and 9 watering points in Dilijan community of Tavush marz.

In Margahovit community of Lori marz, it is envisaged to build 2, while in Fioletovo community 1 watering points.

The construction of watering points and the list of necessary equipment are presented in the Table 1.6.1.

Table: 1.6.1

N	Equipment
1.	Metal barrier
2.	Metal barrier top
3.	Water filter
4.	Metal water pipe
5.	valve
6.	Pipe connection parts
7.	Polyethylene pipe
8.	Parts for connecting polyethylene pipe to metal tube
9.	Metal tube
10.	Metal valve with fittings
11.	Cement
12.	Sand
13.	Metal disk
14.	Electrode 4 mm

15.	Crushed stone
16.	Diesel fuel
17.	Gravel
N	**Works**
1.	Earthwork
2.	Installation of polyethylene pipe parts
3.	Rubble correction
4.	Construction of captation
5	Transportation costs
*Contingency costs 6***%**	
Total	

All the basic equipment and activities required for these operations have been clarified by the experts at the development stage of the project. The expenditures associated with the activities have been calculated serving as basis for calculation of the project budget. Contingency costs of 6% have been included in the budget, due to some possible deviations in equipments, list of activities and prices during the implementation of the project.

Output 1.7: Degraded slopes are rehabilitated by belt planting of perennial, drought resistant plants;

The works will be performed on a 3 ha degraded slope.

The activities aimed at enhancing the adaptation of degraded steep slopes in the conditions of climate change are presented in table 1.7.1.

Table: 1.7.1

Orchard establishment on degraded steep slopes

№	**Title of the activity**	**Agrotechnical period**
1.	Gathering of stones	Autumn
2.	Planning of the area	Autumn
3.	Road smoothing	Autumn
4.	Preparation of irrigation ditches	Autumn
5.	Acquisition of planting material	Autumn

6.	Transportation of the planting material to the area	Autumn
7.	Preparation of the planting holes /30-50cm deep/ and planting of the material	Autumn
8.	Irrigation after planting	Autumn
9.	Purchase and transportation of planting material for filling in	Spring
10.	Replacement of dry trees with new planting material	Spring
11.	Irrigation	Spring
12.	Irrigation during vegetation	Spring-Summer- Autumn
13.	Contingency costs 6**%**	

Component 2: Strengthening value chains and climate smart technology transfer for vulnerable communities

39. Component 2 will complement the adaptation measures in the crop, livestock and forestry production systems by supporting the livelihoods and income earning opportunities of the target communities including with specific provisions to extend access to opportunities to marginalized groups, including women, youth, etc. Sustaining climate smart agricultural practices and reducing the pressure on natural forests, rangelands and protected areas (Khosrov Forest State Reserve and Dilijan National Park) will be enhanced by through agricultural value chain development and the introduction new climate smart technologies to the target communities. The goal of this output at community level is to strengthen population's livelihood by creating new jobs, diversify agriculture, and decrease energy costs in the community and farmers' budget. In the result the overexploitation of agricultural and natural ecosystems will decrease and the resilience and adaptive capacity of landscapes on which the communities strongly depend will thus be enhanced. This component is based on the idea that ecosystem adaptation to climate change is possible to enhance by decreasing the pressure on them and their vulnerability and building alternative methods of resilience to climate change.

The presented data indicate that in all communities there are high poverty level and low birth rates which are close to the Republic's average level. Socially vulnerable target groups make up about 25 percent of the population. Based on community social and demographic situation and the preliminary consultations with community leaders, we have created a chain of activities each link

of which will solve important social and environmental issue. The project highlights energy saving activities enabling communities to direct the saved funds to ensure the continuity of the project results. For this purpose it is envisaged to install solar water heaters in public sector (kindergartens, medical centers) which will save will save a large amount of electricity which paid from the community budget. This event will also improve working conditions of public sector employees serving as a good example for the population to acquire solar water heaters for their own.

Similar programs implemented both in Armenia and in other countries were studied. Our consultations with community leaders mentioned those main activities that under climate change conditions can contribute to ecosystem resilience. Naturally, the program cannot solve all the problems, but these measures can significantly reduce the anthropogenic pressure on protected areas and natural ecosystems adjacent to communities.

40. **Outcome 2: Value chains for climate smart agriculture are strengthened and climate smart technologies are accessible for vulnerable rural communities;**

It is expected that the project would facilitate the adoption of new technologies and strengthen climate smart agricultural value chains. The proposed activities will promote income generation of the population, improvement of livelihood, and thus decrease of anthropogenic pressure on natural ecosystems and in the result increasing the adaptation capacity to climate change in the agricultural sector. The component will focus on the dissemination of best practices in the farm enterprise and public sector, which will improve their opportunities and as a result will contribute to the reduction of anthropogenic pressure on ecosystems under climate change

- Installation of alternative hot water supply systems for the public sector.

41. Community budget study with the project shows the financing of kindergarten and community outpatient clinic is carried out from community budget. The amounts allocated to this public sector are only enough to pay salaries. The specificity of this public sector requires the use of large quantities of energy or other fuels which is very difficult to provide with limited community budgets. Climate change mitigation and adaptation technologies enable the use of solar energy and make significant savings in community budgets. Based on the results of community-based discussions, the program focused on the efficiency of application of solar water heaters the public sector. One solar water heater with a capacity of 250 liters can save $ 600-1000 electricity or other fuels per year. Solar water heaters will significantly improve working and hygienic conditions. Since more than 95% of women are employed in this sector, they will be involved in the planning and implementation of this activity. They are also expected to improve their working conditions.

It's worth mentioning that communities are willing to donate funds to protect project outcomes and to carry out community-based environmental activities that will contribute to enhancing the adaptation of landscapes.

Benefits:

- Improved working and hygienic conditions,
- Improved child care conditions,

- Improved of sanitary conditions,
- Savings from the use of electricity and other fuels,
- Improved project outcome maintenance,
-Implementation of community-based environmental activities.

Beneficiaries- staff of kindergarten, women employed in this sector and community outpatient clinic, children up to 7 years old, community population.

This activity will first of all promote energy saving, decrease the use of gas and wood, decrease the number of greenhouse gas emissions, improve working conditions of women employees, and free up resources from the community budget.

- Construction of non-heated greenhouses with lightweight constructions.

42. The effectiveness of most climate change adaptation measures is largely conditioned by improving the social conditions of the residents, obtaining additional income and agriculture diversification.

During the discussions of project activities in communities, it was a common belief that lightweight constructions of greenhouses and solar dryers would best meet the community's adaptability to climate change.

Lightweight construction of greenhouses

The greenhouses will enable growing vegetable crop seedlings in spring and selling them to residents at low prices. The residents can grow seedlings of such crops that are not traditional for the country but are of high demand in the market. It will be possible to purchase new dry resistant and heat-resistant varieties and hybrid seeds from specialized stores and seed research centers. In the summer and autumn the greenhouse has the potential to grow vegetable crops, part of which will be provided to the community kindergarten. The other part of the harvest will be sold in the market and will provide financial resources for future operation of the greenhouse. If desired, the residents can also heat up the greenhouses until late autumn and grow vegetables that are sold at a relatively high price in the market.

In Armenia the cost of 1 square meter of greenhouse construction with glass, zinc-coated structures is $ 94-110 and and in the case of polycarbonate- $83-100. High-quality polyethylene membranes are currently imported to Armenia with the price ranging from $1.1-1.2 per square meter. This type of membranes are mainly used for the construction of non-heated greenhouses. The greenhouses can be covered with either one-layer or double-layer polyethylene membranes. The cost of construction of one-layer polyethylene membrane greenhouse is ranging from $ 20.8-27.1, while in case of double-layer $ 27.1-31.3.

This activity will promote production of seedlings, increase in crop areas, introduction of non-traditional crops and which will create an opportunity for early crop yield, as well as creation of new jobs for women.

- Construction of solar dryers for fruits, berries, vegetables and herbs.

43. These types of structures are very important for communities as during the massive maturing of the crops their market price equal to the production costs. Since Armenia's nature is rich in wild berries, herbs, plants used in teas and in food, most of which are dried and used in other seasons of the year, it is very important to have solar dryers in the communities. In this case, the residents will be able to quickly and accurately dry crops and plants/herbs and sell them in the market or to the processing industry in the future. The use of solar dryers reduces the raw material loss by 10 to 30 percent compared to home-based drying, and the product comes in much higher quality. Demand for the use of chemical preservatives and disinfectants also disappear. In the conditions of efficient drying of raw materials, the volumes of wild species gathering will be reduced, which will enhance the efficiency of their protection.

The cost of one square meter of solar dryers ranges from 31.3 to 41.7 US dollars in Armenia.
Benefits:
- Additional jobs,
- Additional income opportunities,
- Diversification of fresh and recycled crops,
- Involvement of women in works,
-Improvement of working and hygienic conditions of women,
- Provision of additional food to kindergarten,
- Improvement of sanitary condition and quality of products,
- Tangible savings for the use of electricity and other fuel,
-Improving the maintenance of project outcomes,
- Provision of part of the profit to the implementation of community-based environmental works
Beneficiaries-community residents.

Major purpose for these activities would be the reduction of crop loss, storage improvement and creation of new jobs for women to increase their income and economic opportunities in the communities. In this way climate smart agricultural value chains will be developed for products such as dried apricots, other fruits, berries and herbs, which would help to increase and sustain income opportunities for the farming communities. The project will therefore partner with community organizations, women's organizations and groups, schools and local administration to install and promote solar driers. Training will be provided on these value chains and the marketing of products on the regional and national market.

- Community development, management plans and support for the formulation of climate smart agricultural business plans will be provided to target communities and champions and will include participation from both women and men.

44. The following concrete outputs have been formulated for this component.

Output 2.1: Solar hot water supply systems are installed in priority community areas;
Output 2.2: Non-heated, lightweight greenhouses are constructed in priority community 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;

Output 2.1: Implementation of <<Climate smart agriculture>> technologies

Under current climate change scenario, the implementation of "Climate Smart Farming" practices/techniques that will help reduce greenhouse gas emissions and increase adaptability to natural and agricultural ecosystems is of huge importance. Clearly, in conditions of temperature rise, precipitation and other climatic changes, agriculture cannot struggle against the global warming.

Agriculture differentiates between a number of key areas to increase adaptability.

1. Land management

It is important to maintain or improve the "health" of the land. The main aspects of the "healthy" soil include the following:

- Develop crop varieties which are low water demanding, and resistant to drought, high temperatures, pests, and/or soil salinity, as well as livestock breeds climate-adapted, disease-resistant and highly productive.
- Comprehensive vegetation cover
- The level of soil carbon: comprehensive soil type and climate
- Minimal loss of soil nutrients through soil washing
- Minimal or zero level of soil erosion and heavy rainfalls
- Absence of soil contaminants.

Climate change predictions suppose that the frequency and weight of heavy rainfalls and erosion cases continue growing. There are broad ranges of soil management interference, which foster the decrease of risks of heavy rainfalls and soil erosion starting from forest or farming level interference to landscape level approaches.

2. Crop production

Adaptive measures provide for the cultivation of varieties and hybrids created by new or popular selection methods that are drought-resistant, dew-resistant, heat-resistant, relatively short growing, which can significantly reduce the risk of crop loss or failure. In all communities in the 3,6 ha territories there will be implemented drought, arid, heat, resistant new sorts and hybrids of tomatoes, egg-plant, pepper, and cabbage with relatively short vegetation.

3. Water Management

The most important and required adaptation measures for the water sector in relation to the irrigation facilities are

1. Use modern methodologies for an integrated management planning of water resources
2. Follow modern efficient irrigation systems (drip irrigation, sprinklers, deficit irrigation), raise awareness of farmers to adopt them.
3. Assess the performance of the irrigation and drainage infrastructure, and research and development programmes to prevent pollution and losses
4. Find different patterns of agriculture on the basis of availability of water, such as

covered agriculture, to rationalize water consumption and dispose of prevailing salinity in soil.

.

Adaptation measures provide for water management innovations that are specifically designed to reduce or eliminate the risk of crop erosion and crop yield reduction.

4. Forests and agro forests

Adaptation measures provide for the recovery of ecosystems, resulting in more stable natural disasters and contributing to the prevention of landslides, floods, stabilization of river beds and mitigation of soil erosion. Within the framework of the project, the most appropriate methods for "Climate Smart Agriculture" acceptable for the country have been selected.

1. Drip irrigation, which yields maximum results in areas with insufficient moisture. It is widely used both in greenhouses and in open-air land use.

2. Construction of irrigation network from lightweight composite materials which in addition to water savings, the construction of such irrigation network is relatively cheaper and faster.

3. Mulching is one of the most effective methods for growing healthy plants. During the application of this method, evaporation of moisture from the soil is significantly reduced and, as a result, the irrigation frequency is reduced as well. The upper layer of the soil always remains fragile. Within the framework of the project, the efficacy of moulting will be demonstrated on the area of 1.0 hectares in the community of Urtsadzor.

4. Anti-hail networks that are one of the most effective ways to fight hail. Within the framework of the project, 2.5 ha drip irrigation garden in the community of Urtsadzor will be protected by anti-hail network.

5. New effective organic fertilizers containing essential nutrients for plants. Within the framework of the project, the efficiency of the newest (Organogenic and Bioaccumulation) Organic Fertilizers will be shown on the area of 4.0 hectares.

6. Solar water pumps the use of which use will reduce the costs of irrigation and, as a result, it will be possible to prevent land degradation, to increase the cultivated land, to increase crop yields and profits of farm households.

Solar panels are to be used in the village of Shaghap in Urtsadzor community.

The activities associated with the establishment of a berry orchard (currant, gooseberries, raspberry, blackberry) are presented in Table 2.1.1.

Table: 2.1.1

№	**Title of the activity**	**Agrotechnical period**
1	Gathering of stones (if required)	Spring or Autumn
2	Removal of scrubs and residues (if required)	Spring or Autumn
3	Cleaning of weeds	Spring or Autumn
4	Dispersal of organic fertilizers	Spring or Autumn
5	Deep tillage	Spring or Autumn
6	Earth smoothing	Spring or Autumn
7	Road smoothing	Spring or Autumn
8	Preparation of irrigation ditches	Spring or Autumn
9	Drawing of row and pit places	Spring or Autumn
10	Digging of rows and pits	Spring or Autumn

11	Purchase and transportation of the seedlings to the area of orchard	Spring or Autumn
12	Transplantation of seedlings	Spring or Autumn
13	Pruning	Spring or Autumn
14	Watering of seedlings	Immediately after planting
15	Replacement of dried shrubs with new planting material	Spring
16	Watering	Immediately after planting
17	Irrigation during vegetation *6***%**	Spring-Summer- Autumn
18	Contingency costs *6***%**	

The activities associated with the establishment of a Strawberry orchard are presented in Table 2.1.2.

Table: 2.1.2

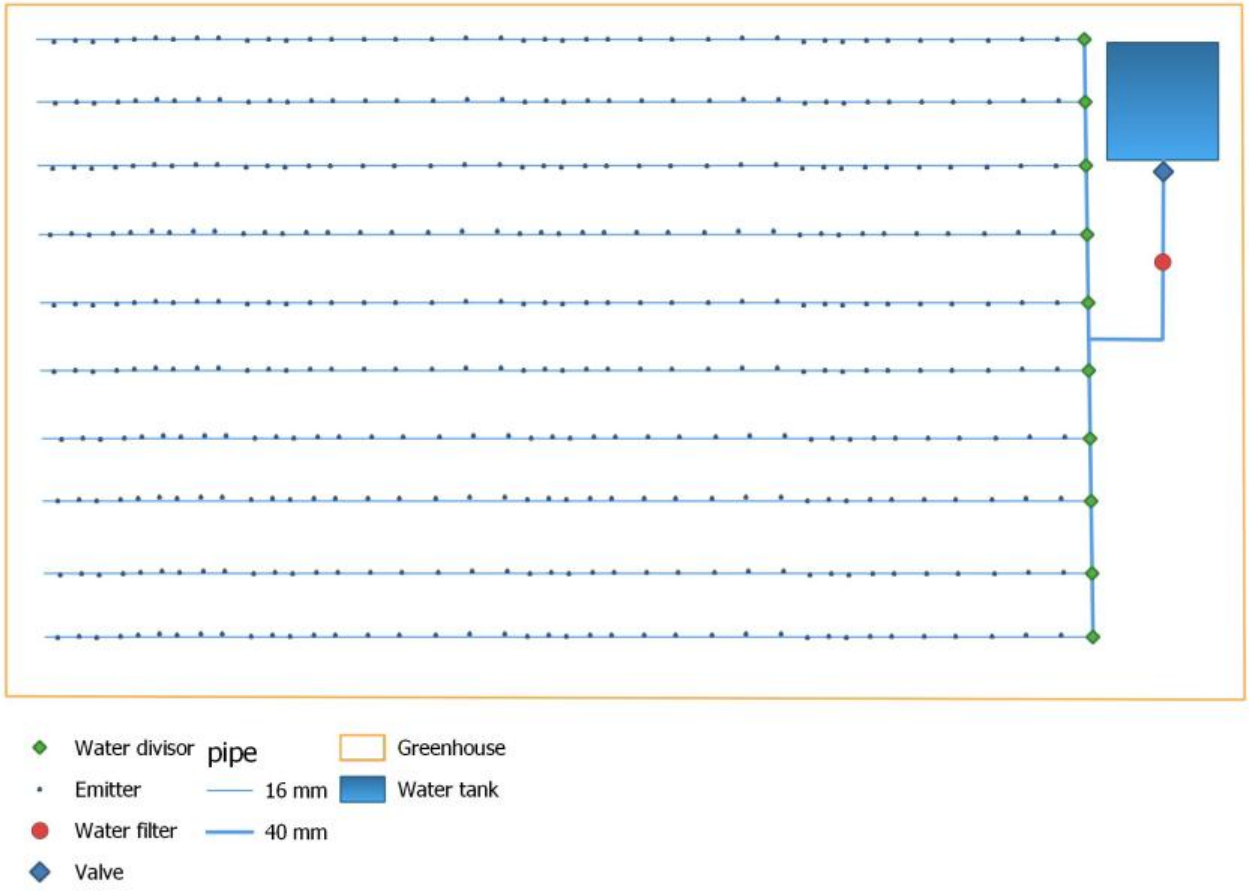
№	**Title of the activity**	**Agrotechnical period**
1	Gathering of stones (if required)	Spring or autumn
2	Removal of scrubs and residues (if required)	Spring or autumn
3	Cleaning of weeds	Spring or autumn
4	Dispersal of organic fertilizers	Spring or autumn
5.	Deep tillage	Spring or autumn
6	Earth smoothing	Spring or autumn
7	Road smoothing	Spring or autumn
8	Preparation of irrigation ditches	Spring or autumn
9	Drawing of row and pit places	Spring or autumn
10	Digging of rows and pits	Spring or autumn
11.	Purchase and transportation of the seedlings to the area of orchard	Spring or autumn
12	Transplantation of seedlings	Spring or autumn
13.	Watering	Immediately after planting
14	Replacement of dried shrubs with new planting material	Spring
15	Watering	Immediately after planting
16	Irrigation during vegetation	Spring-Summer-Autumn
17	Weeding- hoeing	3 times during the vegetation period
18.	Contingency costs *6***%**	

7. Improvement of herbs habitat and creation of testing areas on the field. The works will be carried out on 2,3 ha of land.

Output 2.2: Non-heated, lightweight greenhouses are constructed in priority community areas

It is planned to build 50, 100 and 150 square meters of greenhouses in the communities. In total, 3000 m^2 of greenhouse will be built . For these greenhouses, it is expected to install a drip irrigation system, the feeding of which will be placed in the tank (Figure 2.2.1).

Figure 2.2.1



The required equipment and activities for building greenhouses and implementing drip irrigation system is presented in the table 2.2.1

Table 2.2.1

N	**Equipment**
1.	Greenhouse carcass
2.	Polyethylene shell
3.	Connecting devices for greenhouses
4.	Organic fertilizer

5.	Blacksoil
6.	Pipe with a pipette
7.	Pipe
8.	Cork of a pipe
9.	Divisor
10.	Pipe transition
11.	Valve
12.	Water filter
13.	Valve
14.	Water tank connecting detail
15.	Water Tank
16.	Metal stand
17.	Diesel fuel
18.	Metal cutting disc
19.	Electrode
20.	Paint, ground, solvent
21.	Pipe for water supply
N	**Activities**
1.	Territory smoothing and preparation for greenhouse construction
2.	Pillar Installation
3.	Building of greenhouse carcass
4.	Strengthening of Polyethylene shell
5.	Preparation and transfer of soil mixture to greenhouses
6.	drip system mounting
7.	Transportation expenses
8.	Mounting of water supply pipe
Unplanned Expenses 6%	

<u>Output 2.3: Solar dryers are installed in priority community areas;</u>

30 portable solar dryers will be installed. Based on community requirements, it is predicted to install 100 kg of fresh fruit dryer and 250 kg of fresh fruit drying Solar dryers. In Urtsadzor community the drying season will take 4-5 days, and 6-7 days for Dilijan, Margahovit and Fioletovo communities. In these portable Solar dryers can also be dried herbs, because the drying process is going without direct sunlight exposure.

Output 2.4: Community management and business plans are formulate for climate smart agricultural value chains;

Management plans will be developed for each community that will have business applications.

45. Component 3 Awareness raising, capacity building, monitoring and decision making for climate smart agricultural practices and land degradation neutrality

This component aims to support awareness raising and capacity building (authorities, farmer associations, civil society organizations, and the private sector) in climate smart agriculture as well as land degradation neutrality and support the decision-making and planning process in the target communities. As such component 3 bundles all capacity building, awareness raising and monitoring and evaluation activities supporting the interventions proposed under component 1 and 2. The component supports furthermore the community based planning and monitoring of climate smart agriculture and land degradation neutrality practices and interventions and supports the development of an LDN monitoring framework..

46. Component 3 has one main outcome.
Outcome 3 Awareness, planning and decision making capacity on climate smart agriculture production methods and LDN has increased in target communities;

47. The project will provide training and awareness raising on efficient management of water resources, climate smart agriculture and land degradation neutrality and other relevant issues related to climate change adaptation. Capacity building and awareness raising will be conducted through the training of trainers or community champions, structured information exchanges on best practices, farmer field schools and traditional lecturer-listener models of knowledge transfers. To increase work efficiency highly qualified specialists will be involved both from higher education institutions and regional centers of agricultural assistance. Guidance and training material will be developed through the project, which will be targeted to the local communities and support community groups and local self government board to adapt the training program. The trainings will also be promoted to include equitable participation from women and men. Structured evaluations of the learning events will be conducted after each training course and thereby support the continuous improvement of the training program.

48. A dissemination strategy to capture lessons learnt and make them available to other communities will be developed during the project. Information will be disseminated through public information leaflets and booklets in the communities of the Marz and across the country to roll out climate smart agriculture and land degradation neutrality in other parts of the Marz and the country. This output will focus on the dissemination of best practice through mass media and local self-government bodies. Modern information dissemination tools will be used for this. Regular information on the progress and outcomes of activities will be provided through the websites of the Ministry of Nature Protection, regional administrations and Environmental Project Implementation Unit (EPIU). Grievance redress mechanisms and effective governance measures will be in place of Ministry of Nature Protection, regional administrations and EPIU will make it possible rapidly respond to all complaints with the participatory problem solving approach.

49. In line with the national legislation, policies and national targets[8], the project would support initiatives for sustaining climate smart agriculture and in this context support the process for promoting land degradation neutrality in line with the voluntary targets set. More specifically, this project component would support the establishment of a dedicated **monitoring system for land degradation and land related climate change indicators** and support the enabling environment for sustaining sustainable land management practice. More specifically the following interventions are planned and will be implemented with technical support from the international community, such as UN Convention on Combatting Desertification (UNCCD) and its Global Mechanism (GM):
    - Strengthen target setting and monitoring systems for land degradation neutrality and land related climate change indicators to support the monitoring of land degradation and land related climate change indicators, such as soil carbon and vegetation cover conform international standards and applying state of the art techniques, such as remote sensing. Monitoring sites would be established and the currently available baseline information would be updated to support the contribution to climate change adaption and LDN target setting process;
    - Strengthen capacity building for climate smart agriculture and sustainable land management practices with activities specifically addressed to the needs of female headed households, women groups, etc.;
    - Support the development of climate smart agriculture and LDN investment strategies, which would allow farmer groups, unions of producers, small and medium enterprises, NGOs and other related stakeholders to provide private investments for sustaining climate smart agricultural practices and thereby sustaining the proposed interventions. The project would support the targeted capacity building activities, e.g. for micro, small and medium enterprises and may support small prefeasibility studies in support of these interventions.

[8] The main goal of the LDN strategy, proposed for the period until 2040, is to reestablish the loss of soil organic carbon in the period from 2000 to 2010, and an increase of carbon sequestrated by 2.8%. To achieve this goal, the following actions will be taken.

Knowledge and Needs of the Population of targeted communities on Climate Change and Ecosystem Adaptation

An important outcome of the project is raising awareness and knowledge among the community population which will contribute to ensuring the continuity and sustainability of the Project outputs, both on national and local levels.

It should be noted that some work has been already done to raise awareness of the population on climate change during the period of 2005-17, but it has not been linked to the adaptation measures of natural and agricultural ecosystems.

Implementation of the curricula in the project affected communities pursues the following goals:

1. Promotion of community capacity building on global climate change challenges;
2. Promotion of awareness raising of the population and the level of knowledge on effective adaptation measures under the conditions of climate change;
3. Promotion of the adaptation of natural and agricultural ecosystems and ensuring the effectiveness of the envisaged measures;
4. Support the decision -makers in acquiring the skills necessary to analyze the current situation of natural and agricultural ecosystems under climate change conditions, to develop and revise the list of necessary measures and to establish effective and cooperative relationships with the stakeholders;
5. Increase pupils' environmental awareness and knowledge on the importance of adaptation of agricultural and natural ecosystems under climate change through specially designed courses carried out at schools.
6. Involve mass media and non -governmental organizations for the purpose of implementation of the project, promotion of the results and ensuring sustainability, as well as methods and forms of providing public information.

The surveys were conducted in Urtsadzor (Urtsadzor and Shaghap rural settlements), Dilijan (Dilijan, Aghavnavank, Khachardzan, Gosh, Haghartsin and Teghut rural communities), Margahovit and Fioletovo communities.

Participants at community level trainings

The results of our demographic study revealed that the main layers of the community population include:

- Land users
- Cattle breeders
- Schoolchildren (middle and high school)
- Individual entrepreneurs
- Retirees
- Employees
- Students

More than 80% of the total population in all communities, except for Dilijan, is predominantly land users and cattle breeders. In this sense it is natural that the community-level course participants should be mostly selected from these groups.

It is also important to involve employees, especially municipal staff in the trainings. The theoretical and practical knowledge gained will assist in active involvement in the process of

adaptation of agricultural and natural ecosystems. It is desirable to include representatives of the students from different HEIs who will be able to increase the level of knowledge and skills that will contribute to the solution of personnel issues and the sustainability of the results of the planned work. In our opinion, it is very important not only to involve high school pupils in the courses, but also to organize a separate course for them. Strengthening capacity of these target group members will provide a good basis for increased work efficiency and increased opportunities for professional orientation of the younger generation.

In order to effectively organize the courses, it is advisable to include 15-20 participants. This number of participants will enable effective discussions on the material provided and increase the knowledge through questions and answers addressing other topics of interest.

It should be noted that involvement of too many (25 or more) participants the direct link between the lecturer and the audience is severed and the opportunities to respond to questions at full range are minimized.

Based on the objectives of the component and the issues that require solution, the activities will mainly focus on the awareness and knowledge of vulnerable groups that directly relate to the objectives of the program, the ways to achieve them, and their sustainability and continuity.
For all target groups, the idea is that mankind can fight not only to alleviate climate changes, but also to develop effective measures aimed at the prevention of natural disasters, increasing the adaptation potential of natural and agricultural ecosystems.

The study includes:

- Development of questionnaires for knowledge assessment (Annex 1, 2).
- Questionnaire analysis, which includes:
  - Assessment of the knowledge of participants through questionnaires on the issues provided
  - Assessment of the needs of the participants on the proposed trainings;
  - Assessment of the needs of the participants on preferred topics (separate points of the questionnaire give an opportunity to indicate the preferred topics that the respondent finds most important in raising his or her knowledge level).

Methods of implementation of the curriculum

Based on the needs of the participants, the level of knowledge and the topics provided, it is expedient to apply knowledge, awareness-raising and dissemination of information through the "Simplified Learning", "Explanatory Exposition", "Targeted Learning" and "Case Studies". Such an approach enables the unity of the provision, acceptance, accumulation, maintenance and application of the information.

Questionnaires are based on the principle of:

1. Revealing the awareness and knowledge level of the stakeholders in the result of the response analysis on the raised issues,
2. Identifying the needs of the training course topics;
3. Organizing trainings according to individual stakeholders and target groups.

The surveys were conducted in the form of questionnaires and partial interviews.
The questionnaires have been completed in the communities in advance, explaining the importance of knowledge and needs assessment and relevant training in achieving the project goals. Moreover, the questionnaires were filled on a voluntary basis, in order to be realistically open to those who would like to participate in the trainings in the future, so the survey participants will be able to answer the questionnaire freely and honestly.

The questionnaires have been analyzed in Microsoft Excel package, allowing the participants to input, analyze, summarize and get the average and per community data.
The completed questionnaires are kept in the "Environmental Projects Implementation Unit" State Agency. The participants of the survey included 70 adults and 18 schoolchildren from Urtsadzor community of the RoA Ararat marz, 120 adults and 29 schoolchildren from Dilijan community of the RoA Tavush marz and 40 adults and 15 schoolchildren from both Margahovit and Fioletovo communities of Lori Marz of the RoA.
Data on the participants according to marzes is presented in |Tables 1-3.

Table1: Demographic data of survey participants in Urtsadzor community of Ararat marz

Gender					
Male		Female			
42,9%		**57,1**%			
Educational qualification					
Higher		Secondary special		Secondary	
48,6%		**10,0**%		**41,4**%	
Age Group					
Up to 25 years old		26-35 years old		36-50 years old	51 and older
13,3%		**11,7**%		**28,3**%	**46,7**%
Social group					
Employed	Farmer	Student	Pensioner	Beneficiary	Unemployed
51,4%	**35,7**%	**4,3**%	**7,1**%	**1,4**%	**0,1**%

Table 2: Demographic data of survey participants in Dilijan community of Tavush marz

Gender			
Male		Female	
41,7%		**58,3**%	
Educational qualification *			
Higher		Secondary special	Secondary
41,1%		**35,5**%	**23,4**%
Up to 25 years old	26-35 years old	36-50 years old	51 and older

24,6%	**25,4**%	**28,1**%	**21,9**%

Social group					
Employed	Farmer	Student	Pensioner	Beneficiary	Unemployed
51,7%	**29,2**%	**7,5**%	**7,5**%	**4,1**%	**0,0**%

Educational qualification * - 14 respondents did not answer:
Age Group ** - 6 respondents did not answer

Table.3: Demographic data of survey participants in Margahovit and Fioletovo communities of Lori marz

Gender	
Male	Female
42,9%	**57,1**%

Educational qualification		
Higher	Secondary special	Secondary
55,8%	**11,5**%	**32,7**%

Age Group			
Up to 25 years old	26-35 years old	36-50 years old	51 and older
25,7%	**10,0**%	**24,3**%	**40,0**%

Social group						
Employed	Farmer	Student	Pupil	Pensioner	Beneficiary	Unemployed
41,0%	**35,0**%	**4,1**%	**8,1**	**8,2**%	**1,6**%	**2,0**%

It should be noted, that in the rural communities surveyed participants who noted that they did not work have privatized lands and keep large and small cattle.

Table 4: The answers of the survey participants in Urtsadzor community to the questions included in the questionnaire

N	**The questions included in the questionnaire**	**Answers**
1.	Do you find that climate change is evident in your region?	Yes- 68 No -2
2.	If yes, how is it expressed (please specify)	Early spring frosts- 43 Summer high temperatures - 41 Torrential downpours - 12 Decrease in precipitation -29

		Reduction of river discharge - 40 Increasing drought period -19 Increasing frequency of hot winds-5 Other - hails
3.	How is climate change affecting pastures and hayfields, arable land, orchards and vineyards, vegetable crops and grain yield	Positive -1 Negative 64 Did not answer - 5
4.	Do you find that at present there are measures aimed at the improvement of adaptation of pastures and hayfields, agricultural lands to climate change?	Yes 14 No-24 Did not answer -32
5.	If yes, please list the known measures	Construction of deep wells, repair of irrigation canals, construction of watering points, introduction of new technologies for irrigation water use
6.	What is your attitude towards a grant project on adaptation to climate change of pastures and hayfields and agricultural lands to be carried out in your community	Positive -59 Negative - 0 Did not answer -11
7.	If positive, what activities would you prefer? /please specify/	Improvement of degraded pastures and hayfields – 12 Increased fertility of arable land-26 New technologies for saving irrigation water -48 Creating a stable feedstuff base-4 Midfield road repairs-30 Construction of watering points - 27 Other- solar water heaters
8.	How do you feel about the idea of constructing solar dryers, small unheated greenhouses and solar water heaters for general use in your community within the project?	Positive - 63 Negative - 0 Did not answer 7
9	If positive, how do you imagine the mechanism of their effective use?	Establishing stakeholder groups -19 Signing an agreement with the community administration -17 Providing schools -2 Did not answer -2 Other
10	Do you know that there is a Specially protected area of nature /SPAN/ near your community?	Yes -54 No- 16
11	Do you use the natural resources within the area of the SPAN?	Yes -29 No - 31

12	If yes, please highlight the ways of usage	Grazing -14 Haymaking -14 Gathering of edible plants and fungi -21 Firewood harvesting-3
13	What is your knowledge on the causes of global climate change and the projected consequences in Armenia?	Good-6 Satisfactory -44 Did not answer -20
14	What is your knowledge on the adaptation measures of natural landscapes (pastures, hayfields, and forest areas) under global climate change conditions?	Good- 12 Satisfactory -31 Did not answer -27
15	What is your knowledge on the adaptation measures of agricultural landscapes (arable land, orchards and vineyards) under global climate change conditions?	Good- 9 Satisfactory -37 Did not answer -24
16	Did your community previously organize informational trainings on adaptation of pastures, hayfields and agricultural lands under climate change?	Yes -17 No -32 Did not answer -21
17	How do you think the increase in the level of knowledge and awareness of the population will contribute to the improvement of the activities aimed at the adaptation of pastures and hayfields under the climate change conditions?	To a great extent -22 To some extent -35 Did not answer -13

If you believe that raising the level of knowledge will help improving the adaptation of natural and agricultural landscapes, please answer which training topics would you choose

1	The causes of global climate change and expected Impacts in Armenia	Yes -44 No -26
2	Adaptation of natural and agricultural landscapes (pastures, hayfields, forest areas, orchards, etc.) under the conditions of global climate change	Yes -48 No -22
3	International experience in climate-wise "clever" methods of farming under climate change conditions and investment opportunities in Armenia	Yes -53 No -17
4	Tourism and ecotourism	Yes -41 No -29
5	Efficient livestock management techniques	Yes -48 No -22
6	Other topics	

7	How do you see the chances of your involvement in the project's knowledge and awareness raising component.	Positive -48 Did not answer -22
7.1	If positive, how do you imagine your participation in the project?	Involvement in the teaching staff - 6 Involvement as a participant - 64 Other -

The analysis of the survey results shows that:

1. To the question "Do you find that climate change is evident in your region?" 97,1% of respondents answered "yes" and 2.9% answered "no"
2. To the question "If yes, how is it expressed (please specify)" the following answers were given:
   Early spring frosts– 61.47%
   Summer high temperatures – 58.6%
   Torrential downpours – 17.1%
   Decrease in precipitation – 41.4%
   Reduction of river discharge – 57.1%
   Increasing drought period -27.1%
   Increasing frequency of hot winds-7.1%
   Other - hails
3. To the question "How is climate change affecting pastures and hayfields, arable land, orchards and vineyards, vegetable crops and grain yield" 1,4% of respondents gave a positive answer 91,4% a negative one and 7,2% Did not answer the question.
4. To the question "Do you find that at present there are measures to improve the adaptation of pastures and hayfields, agricultural land to climate change?" 20,0% of the respondents answered "yes", 34, 3% answered "no" and 45, 7% didn't answer the question.
5. To the question "If yes, please list the known measures" the respondents specified the following: construction of deep wells, rehabilitation of irrigation ditches, application of closed pipelines, introduction of new irrigation water use technologies, solar water heaters.
6. "How will you react, if a grant project on adaptation to climate change of pastures and hayfields and agricultural lands is carried out in your community" positive answer was given by 84,3% and 15,7% did not answer.
7. To the question "If positive, what activities would you prefer? / please specify/" the following answers were given:
   Improvement of degraded pastures and hayfields – 17, 1%
   Increase in fertility of arable land- 37, 1%
   New technologies for saving irrigation water - 68,6%
   Creating a stable feedstuff base - 5,7%
   Midfield road repairs- 42,9%
   Construction of watering points– 38,6%
   Other- solar water heaters
8. To the question "How do you feel about the idea of constructing solar dryers, small unheated greenhouses and solar water heaters for general use in your community within the project?" 90, 0% of respondents gave a positive answer, 0% gave a negative answer and 10, 0% did not answer the question.

9. To the question "If positive, how do you imagine the mechanism of their effective use?" the following answers were given:
   Establishing stakeholder groups -27,1%
   Signing an agreement with the community administration -24,3%
   Providing schools -2,9%
   Did not answer -2,9%
   Other- providing to individuals.
10. To the question "Do you know that there is a specially protected area of nature /SPAN/near your community?" the answer "yes" was given by 77,1% and "no" by 22,9% of the respondents.
11. The question "Do you use the natural resources within the area of the SPAN?" was given to 60 respondents /"yes" 48,3%, "no" 51,7%/.
12. To the question "If yes, please highlight the ways of usage" the following answers were given:
   Grazing - 48,2%
   Haymaking - 48,2%
   Gathering of edible plants and fungi -72,4%
   Firewood harvesting-10,3%
13. To the question "What is your knowledge on the causes of global climate change and the projected consequences in Armenia?" 8,6% of the respondents answered "good", 62,9% "satisfactory" and 28,5% did not answer the question.
14. To the question "What is your knowledge on the adaptation measures of natural landscapes (pastures, hayfields, and forest areas) under global climate change conditions?" 17,1% of the respondents answered "good", 44,3% "satisfactory" and 38,6% did not answer the question.
15. To the question "What is your knowledge on the adaptation measures of agricultural landscapes (arable land, orchards and vineyards) under global climate change conditions?" 12,9% of the respondents answered "good", 52,9% "satisfactory" and 34,2% did not answer the question.
16. To the question "Did your community previously organize informational trainings on adaptation of pastures, hayfields and agricultural lands under climate change?" 24,3% of respondents gave a positive answer, 45,7% gave a negative answer and 30,0% did not answer the question.
17. To the question "How do you think the increase in the level of knowledge and awareness of the population will contribute to the improvement of the activities aimed at the adaptation of pastures and hayfields under the climate change conditions?" the following answers were given:
   To a great extent -31, 4%
   To some extent -50, 0%
   Did not answer - 18, 6 %:
18. To the question "How do you see the chances of your involvement in the project's knowledge and awareness raising component." 68,6% answered positive and 31, 4% did not answer.
19. To the question "If positive, how do you imagine your participation in the project?" the following answers were given:

19.1 8,6%- involvement in the teaching staff

19.2 91, 4% - involvement as a participant.

Table.5: The answers of the survey participants in Dilijan community to the questions included in the questionnaire

N	The questions included in the questionnaire	Answers
1.	Do you find that climate change is evident in your region?	Yes - 112 No -8
2.	If yes, how is it expressed (please specify)	Early spring frosts- 55 Summer high temperatures - 62 Torrential downpours - 62 Decrease in precipitation -13 Reduction of river discharge - 14 Increasing drought period -20 Increasing frequency of hot winds-10 Other - hails
3.	How is climate change affecting pastures and hayfields, arable land, orchards and vineyards, vegetable crops and grain yield	Positive -2 Negative - 92 Did not answer - 26
4.	Do you find that at present there are measures aimed at the improvement of adaptation of pastures and hayfields, agricultural lands to climate change?	Yes- 14 No -65 Did not answer -41
5.	If yes, please list the known measures	repair of irrigation canals, introduction of new technologies for irrigation water use, increase in fertility of arable land
6.	How will you react, if a grant project on adaptation to climate change of pastures and hayfields and agricultural lands is carried out in your community	Positive -99 Negative -0, Did not answer -21
7.	If positive, what activities would you prefer? / please specify /	Improvement of degraded pastures and hayfields - 31 Increase in fertility of arable land -54 New technologies for saving irrigation water -66 Creating a stable feedstuff base-24 Midfield road repairs-75 solar water heaters - 29

		Other– Introduction of new technologies
8.	How do you feel about the idea of constructing solar dryers, small unheated greenhouses and solar water heaters for general use in your community within the project?	Positive - 97 Negative - 0 Did not answer 23
9	If positive, how do you imagine the mechanism of their effective use?	Establishing stakeholder groups -14 Signing an agreement with the community administration - 32 Providing schools - 5 Did not answer - 69 Other
10	Do you know that there is a Specially protected area of nature /SPAN/ near your community?	Yes -96 No -24
11	Do you use the natural resources within the area of the SPAN?	Yes -74 No -46
12	If yes, please highlight the ways of usage	Grazing -24 Haymaking -36 Gathering of edible plants and fungi -59 Firewood harvesting-39
13	What is your knowledge on the causes of global climate change and the projected consequences in Armenia ?	Good-16 Satisfactory -37 Did not answer -67
14	What is your knowledge on the adaptation measures of natural landscapes (pastures, meadows, forest areas) under global climate change conditions?	Good-16 Satisfactory -28 Did not answer -76
15	What is your knowledge on the adaptation measures of agricultural landscapes (arable land, orchards and vineyards) under global climate change conditions?	Good-13 Satisfactory -32 Did not answer -75
16	Did your community previously organize informational trainings on adaptation of pastures, hayfields and agricultural lands under climate change?	Yes -13 No -55 Did not answer -52
17	How do you think the increase in the level of knowledge and awareness of the population will contribute to the improvement of the activities aimed at the adaptation of pastures and hayfields under the conditions of climate change?	To a great extent -44 To some extent -49 Did not answer -27

If you believe that raising the level of knowledge will help improving the adaptation of natural and agricultural landscapes, please answer which training topics would you choose		
1	The causes of global climate change and expected Impacts in Armenia	Yes – 78 No -42
2	Adaptation to natural and agricultural landscapes (pastures, hayfields, forest areas, orchards, etc.) under the conditions of global climate change	Yes - 84 No -36
3	International experience in climate-wise "clever" methods of farming under climate change conditions and investment opportunities in Armenia	Yes -93 No -27
4	Tourism and ecotourism	Yes -86 No -34
5	Efficient livestock management techniques	Yes -76 No -44
6	Other topics	Anti-hail activities, energy-saving technologies
7	How do you see the chances of your involvement in the project's knowledge and awareness raising component.	Positive -73 Did not answer -47
7.1	If positive, how do you imagine your participation in the project?	Involvement in the teaching staff - 10 Involvement as a participant – 110 Other -0

The analysis of the survey results shows that:

1. To the question "Do you find that climate change is evident in your region?" 93,3% of respondents answered "yes" and 6,7% answered "no".
2. To the question "If yes, how is it expressed (please specify)" the following answers were given:
   Early spring frosts– 45,8%
   Summer high temperatures – 51,7%
   Torrential downpours – 51,7%
   Decrease in precipitation – 10,8%
   Reduction of river discharge – 11,7%
   Increasing drought period -16,7%
   Increasing frequency of hot winds-8,3%
   Other - hails
3. To the question "How is climate change affecting pastures and hayfields, arable land, orchards and vineyards, vegetable crops and grain yield" 1,6% of respondents gave a positive answer, 76.7% gave a negative answer and 21,7% did not answer the question.

4. To the question “Do you find that at present there are measures to improve the adaptation of pastures and hayfields, agricultural land to climate change?” 11,7% of the respondents answered "yes", 54,2% answered "no" and 34,1% didn’t answer the question.
5. To the question “If yes, please list the known measures” the respondents specified the following: rehabilitation of irrigation ditches, introduction of new irrigation water use technologies and fertilization of arable land.
6. To the question “How will you react, if a grant project on adaptation of pastures and hayfields and agricultural lands under the conditions of climate change is carried out in your community” positive answer was given by 82,5% and 17,2% did not answer.
7. To the question “If positive, what activities would you prefer? / please specify/“ the following answers were given:
   Improvement of degraded pastures and hayfields – 25,8%
   Increase in fertility of arable land - 45,0%
   New technologies for saving irrigation water -55,0%
   Creating a stable feedstuff base- 20,0%
   Midfield road repairs-62,5%
   Solar water heaters – 24,2%
   Other – introduction of new technologies.
8. To the question “How do you feel about the idea of constructing solar dryers, small unheated greenhouses and solar water heaters for general use in your community within the project?” 80.8% of respondents gave a positive answer, 0% gave a negative answer and 20,0% did not answer the question.
9. To the question “If positive, how do you imagine the mechanism of their effective use?” the following answers were given
   Establishing stakeholder groups -11,7%
   Signing an agreement with the community administration -26,6%
   Providing to schools -4,2%
   Did not answer -57,5%
   Other- providing to individuals.
10. To the question “Do you know that there is a specially protected area of nature /SPAN/near your community?” the answer “yes” was given by 80,0% and “no” by 20,0% of the respondents.
11. To the question “Do you use the natural resources within the area of the SPAN?” the answer “yes” was given by 61,7% and “no” by 38,3% of the respondents.
12. To the question “If yes, please highlight the ways of usage” the following answers were given:
   Grazing – 48,2%
   Haymaking -48,2%
   Gathering of edible plants and fungi -72,4%
   Firewood harvesting-10,3%
13. To the question “What is your knowledge on the causes of global climate change and the projected consequences in Armenia?” 13,4% of the respondents answered “good”, 30.8% “satisfactory” and 55,8% did not answer the question.
14. To the question “What is your knowledge on the adaptation measures of natural landscapes (pastures, hayfields and forest areas) under global climate change conditions?”

13,3% of the respondents answered "good", 23,3% "satisfactory" and 63,4% did not answer the question.

15. To the question "What is your knowledge on the adaptation measures of agricultural landscapes (arable land, orchards and vineyards) under global climate change conditions?" 10,8% of the respondents answered "good", 26,7% "satisfactory" and 62,5% did not answer the question.

16. To the question "Did your community previously organize informational training on adaptation of pastures, hayfields and agricultural lands under climate change?" 10,8% of respondents gave a positive answer, 45,8% gave a negative answer and 43,4% did not answer the question.
17. To the question "How do you think the increase in the level of knowledge and awareness of the population will contribute to the improvement of the activities aimed at the adaptation of pastures and hayfields under the climate change conditions?" the following answers were given:
    To a great extent -36, 7%
    To some extent -40,8%
    Did not answer 22,5 %:
18. To the question "How do you see the chances of your involvement in the project's knowledge and awareness raising component?" 60,8% answered positive and 39,2% did not answer.
19. To the question "If positive, how do you imagine your participation in the project?" the following answers were given:
    19.1 8,3%- involvement in the teaching staff
    19.2 91,7% - involvement as a participant.

Table6: The answers of the survey participants in Margahovit community to the questions included in the questionnaire

N	The questions included in the questionnaire	Answers
1.	Do you find that climate change is evident in your region?	Yes - 18 No -2
2.	If yes, how is it expressed (please specify)	Early spring frosts- 5 Summer high temperatures - 16 Torrential downpours - 12 Decrease in precipitation -3 Reduction of river discharge - 4 Increasing drought period -10 Increasing frequency of hot winds-10 Other - hails
3.	How is climate change affecting pastures and hayfields, arable land, orchards and vineyards, vegetable crops and grain yield	Positive -0 Negative - 18 Did not answer - 2

4.	Do you find that at present there are measures to increase the adaptation of pastures and hayfields, agricultural land to climate change?	Yes-1 No -19 Did not answer -0
5.	If yes, please list the known measures	Introduction of new technologies for irrigation water use, increasing fertility of arable land
6.	How will you react, if a grant project on adaptation to climate change of pastures and hayfields and agricultural lands is carried out in your community?	Positive -20 Negative- 0, Did not answer -0
7.	If positive, what activities would you prefer? / please specify /	Improvement of degraded pastures and hayfields - 2 Increase in fertility of arable land -5 New technologies for saving irrigation water -6 Creating a stable feedstuff base- 4 Midfield road repairs-17 solar water heaters - 9 Other– Introduction of new technologies
8.	How do you feel about the idea of constructing solar dryers, small unheated greenhouses and solar water heaters for general use in your community within the project?	Positive - 17 Negative - 0 Did not answer – 3
9	If positive, how do you imagine the mechanism of their effective use?	Establishing stakeholder groups -4 Signing an agreement with the community administration - 3 Providing schools - 6 Did not answer - 7 Other -0
10	Do you know that there is a Specially protected area of nature /SPAN/near your community?	Yes -14 No -6
11	Do you use the natural resources within the area of the SPAN?	Yes -14 No -6
12	If yes, please highlight the ways of usage	Grazing -10 Haymaking - 6 Gathering of edible plants and fungi -11 Firewood harvesting-3
13	What is your knowledge of the causes of global climate change and the projected consequences in Armenia?	Good- 3 Satisfactory -5 Did not answer -12

14	What is your knowledge on the adaptation measures of natural landscapes (pastures, meadows, forest areas) under global climate change conditions?	Good- 1 Satisfactory -2 Did not answer -17
15	What is your knowledge on the adaptation measures of agricultural landscapes (arable land, orchards and vineyards) under global climate change conditions?	Good- 1 Satisfactory -3 Did not answer -16
16	Did your community previously organize informational training on adaptation of pastures, hayfields and agricultural lands under climate change?	Yes -1 No -15 Did not answer -4
17	How do you think the increase in the level of knowledge and awareness of the population will contribute to the improvement of the activities aimed at the adaptation of pastures and hayfields under the conditions of climate change?	To a great extent -14 To some extent -4 Did not answer -2
If you believe that raising the level of knowledge will help improving the adaptation of natural and agricultural landscapes, please answer which training topics would you choose		
1	The causes of global climate change and expected Impacts in Armenia	Yes - 18 No -2
2	Adaptation to natural and agricultural landscapes (pastures, hayfields, forest areas, orchards, etc.) under the conditions of global climate change	Yes - 14 No -6
3	International experience in climate-wise "clever" methods of farming under climate change conditions and investment opportunities in Armenia	Yes -19 No -1
4	Tourism and ecotourism	Yes -16 No -4
5	Efficient livestock management techniques	Yes -14 No -6
6	Other topics	Anti-hail activities, greenhouses, new technologies
7	How do you see the chances of your involvement in the project's knowledge and awareness raising component	Positive -17 Did not answer -3
7.1	If positive, how do you imagine your participation in the project?	Involvement in the teaching staff - 1 Involvement as a participant - 19 Other -0

The analysis of the survey results shows that:

1. To the question “Do you find that climate change is evident in your region?” 90, 0% of respondents answered "yes" and 10.0% answered “no”.
2. To the question “If yes, how is it expressed (please specify)” the following answers were given:
   Early spring frosts– 25, 0%
   Summer high temperatures – 80, 0%
   Torrential downpours – 60, 0%
   Decrease in precipitation – 15, 0%
   Reduction of river discharge – 20, 0%
   Increasing drought period -50, 0%
   Increasing frequency of hot winds-50, 0%
   Other - hails
3. To the question “How is climate change affecting pastures and hayfields, arable land, orchards and vineyards, vegetable crops and grain yield” 0% of respondents gave a positive answer, 90.0% gave a negative answer and 10,0% did not answer the question.
4. To the question “Do you find that at present there are measures to improve the adaptation of pastures and hayfields, agricultural land to climate change?” 5, 0% of the respondents answered "yes", 95, 0% answered "no" and 0% did not answer the question.
5. To the question “If yes, please list the known measures” the respondents specified the following: introduction of new technologies for irrigation water use and fertilization of arable land.
6. To the question “How will you react, if a grant project on adaptation to climate change of pastures and hayfields and agricultural lands is carried out in your community” positive answer was given by 100% of the respondents.
7. To the question “If positive, what activities would you prefer? / please specify/“ the following answers were given:
   Improvement of degraded pastures and hayfields – 10,0%
   Increase in fertility of arable land 25,0%
   New technologies for saving irrigation water -30,0%
   Creating a stable feedstuff base20,0%
   Midfield road repairs-85,0%
   Solar water heaters – 45,2%
   Other- introduction of new crops and technologies
8. To the question “How do you feel about the idea of constructing solar dryers, small unheated greenhouses and solar water heaters for general use in your community within the project?” 85.0% of respondents gave a positive answer, 0% gave a negative answer and 15,0% did not answer the question.
9. To the question “If positive, how do you imagine the mechanism of their effective use?” the following answers were given:
   Establishing stakeholder groups -20,0%
   Signing an agreement with the community administration -15,0%
   Providing schools -30,0%
   Did not answer -35,0%
   Other

10. To the question "Do you know that there is a specially protected area of nature /SPAN/ near your community?" the answer "yes" was given by 70,0% and "no" by 30,0% of the respondents.
11. To the question "Do you use the natural resources within the area of the SPAN?" the answer "yes" was given by 61,7% and "no" by 38,3% of the respondents.
12. To the question "If yes, please highlight the ways of usage" the following answers were given:
    Grazing – 71,4%
    Haymaking -42,9%
    Gathering of edible plants and fungi -78,6%
    Firewood harvesting-21,3%
13. To the question "What is your knowledge on the causes of global climate change and the projected consequences in Armenia?" 15,0% of the respondents answered "good", 25.0% "satisfactory" and 60.0% did not answer the question.
14. To the question "What is your knowledge on the adaptation measures of natural landscapes (pastures, hayfields and forest areas) under global climate change conditions?" 5.0% of the respondents answered "good", 10.0% "satisfactory" and 85.0% did not answer the question.
15. To the question "What is your knowledge on the adaptation measures of agricultural landscapes (arable land, orchards and vineyards) under global climate change conditions?" 5.0% of the respondents answered "good", 15.0% "satisfactory" and 80.0% did not answer the question.
16. To the question "Did your community previously organize informational training on adaptation of pastures, hayfields and agricultural lands under climate change?" 5.0% of respondents gave a positive answer, 75.0% gave a negative answer and 20.0% did not answer the question.
17. To the question "How do you think the increase in the level of knowledge and awareness of the population will contribute to the improvement of the activities aimed at the adaptation of pastures and hayfields under the climate change conditions?" the following answers were given:
    To a great extent -70, 0%
    To some extent -20, 0%
    Did not answer 10,0 %:
20. To the question "How do you see the chances of your involvement in the project's knowledge and awareness raising component." 85.0% answered positive and 15.0% did not answer.
21. To the question "If positive, how do you imagine your participation in the project?" the following answers were given:
    a. 5,0%- involvement in the teaching staff
    b. 95,0% - involvement as a participant.

Table 7: The answers of the survey participants in Fioletovo community to the questions included in the questionnaire

N	Questions included in the questionnaire	Answers
1.	Do you find that climate change is seen in your region?	Yes - 16 No -4
2.	If yes, how is it expressed (please specify)	Early spring frosts- 3 Summer high temperatures - 13 Torrential downpours - 10 Decrease in precipitation -2 Reduction of river discharge - 6 Increasing drought period -11 Increasing frequency of hot winds-7 Other - hails
3.	How is climate change affecting pastures and hayfields, arable land, orchards and vineyards, vegetable crops and grain yield	positive -1 negative - 16 difficult to answer` - 3
4.	Do you find that at present there are measures to increase the adaptation of pastures and hayfields, agricultural land to climate change?	Yes - 0 No -17 Did not answer -3
5.	If yes, please list the known measures	Introduction of new technologies for irrigation water use
6.	How will you react, if a grant project on adaptation to climate change of pastures and hayfields and agricultural lands is carried out in your community	Positive -17 Negative - 0 Did not answer -3
7.	If positive, what activities would you prefer? / please specify /	Improvement of degraded pastures and hayfields - 2 Increase in fertility of arable land -4 New technologies for saving irrigation water -2 Creating a stable feedstuff base- 5 Midfield road repairs-18 solar water heaters - 15 Other- introduction of new crops and technologies
8.	How do you feel about the idea of constructing solar dryers, small unheated greenhouses and solar water heaters for general use in your community within the project?	Positive - 11 Negative - 0 Did not answer – 9

9	If positive, how do you imagine the mechanism of their effective use?	Establishing stakeholder groups -2 Signing an agreement with the community administration - 11 Providing schools - 3 Did not answer - 4 other -0
10	Do you know that there is a Specially protected area of nature /SPAN/near your community?	Yes -15 No -5
11	Do you use the natural resources within the area of the SPAN?	Yes -11 No -9
12	If yes, please highlight the usage type	Grazing - 5 Haymaking - 1 Gathering of edible plants and fungi -11 Firewood harvesting-1
13	What is your knowledge of the causes of global climate change and the projected consequences in Armenia?	Good- 2 Satisfactory -3 Did not answer -15
14	What is your knowledge on the adaptation measures of natural landscapes (pastures, meadows, forest areas) under global climate change conditions?	Good- 1 Satisfactory -2 Did not answer -17
15	What is your knowledge on the adaptation measures of agricultural landscapes (arable land, orchards and vineyards) under global climate change conditions?	Good- 1 Satisfactory -2 Did not answer -17
16	Did your community previously organize informational training on adaptation of pastures, hayfields and agricultural lands under climate change?	Yes -0 No -19 Did not answer -1
17	How do you think the increase in the level of knowledge and awareness of the population will contribute to the improvement of the activities aimed at the adaptation of pastures and hayfields under the conditions of climate change?	to a great extent -15 to some extent -3 Did not answer -2
If you believe that raising the level of knowledge will help improving the adaptation of natural and agricultural landscapes, please answer which training topics would you choose		
1	The causes of global climate change and projected impacts in Armenia	Yes - 15 No -5
2	Adaptation to natural and agricultural landscapes (pastures, hayfields, forest areas, orchards, etc.) under the conditions of global climate change	Yes - 13 No -7

3	International experience in climate-wise "clever" methods of farming under climate change conditions and investment opportunities in Armenia	Yes -16 No -4
4	Tourism and ecotourism	Yes -13 No -7
5	Efficient livestock management techniques	Yes -15 No -5
6	Other topics	New technologies
7	How do you see the chances of your involvement in the project's knowledge and awareness raising component.	Positive -16 Did not answer -4
7.1	If positive, how do you imagine your participation in the project?	Involvement in the teaching staff - 0 Involvement as a participant - 15 other -0

The analysis of the survey results shows that:

1. To the question "Do you find that climate change is evident in your region?" 80,0% of respondents answered "yes" and 20.0% answered "no".
2. To the question "If yes, how is it expressed (please specify)" the following answers were given:
   Early spring frosts– 18,8%
   Summer high temperatures – 81,3%
   Torrential downpours – 62,5%
   Decrease in precipitation – 12,5%
   Reduction of river discharge – 37,5%
   Increasing drought period -68,8%
   Increasing frequency of hot winds-43,8%
   Other - hails
3. To the question "How is climate change affecting pastures and hayfields, arable land, orchards and vineyards, vegetable crops and grain yield" 5.0% of respondents gave a positive answer, 80.0% gave a negative answer and 15,0% did not answer the question.
4. To the question "Do you find that at present there are measures to improve the adaptation of pastures and hayfields, agricultural land to climate change?" 0,0% of the respondents answered "yes", 85,0% answered "no" and 15.0% did not answer the question.
5. To the question "If yes, please list the known measures" the respondents specified the following: introduction of new irrigation water use technologies.
6. To the question "How will you react, if a grant project on adaptation to climate change of pastures and hayfields and agricultural lands is carried out in your community" positive answer was given by 85.0% of the respondents and 15.0% Did not answer the question. .
7. To the question "If positive, what activities would you prefer? / please specify/" the following answers were given:

Improvement of degraded pastures and hayfields – 10,0%
Increase in fertility of arable land 20,0%
New technologies for saving irrigation water -10,0%
Creating a stable feedstuff base25,0%
Midfield road repairs-90,0%
Solar water heaters – 75,0%
Other- introduction of new crops and technologies

8. To the question "How do you feel about the idea of constructing solar dryers, small unheated greenhouses and solar water heaters for general use in your community within the project?" 55.0% of respondents gave a positive answer, 0% gave a negative answer and 45,0% Did not answer the question.
9. To the question "If positive, how do you imagine the mechanism of their effective use?" the following answers were given:
   Establishing stakeholder groups -10,0%
   Signing an agreement with the community administration -55,0%
   Providing schools -15,0%
   Did not answer -20,0%
   Other
10. To the question "Do you know that there is a specially protected area of nature /SPAN/ near your community?" the answer "yes" was given by 75,0% and "no" by 25,0% of the respondents.
11. To the question "Do you use the natural resources within the area of the SPAN?" the answer "yes" was given by 55.0% and "no" by 45.0% of the respondents.
12. To the question "If yes, please highlight the ways of usage" the following answers were given:
    Grazing – 45,5%
    Haymaking -9,1%
    Gathering of edible plants and fungi -100,0%
    Firewood harvesting-9,1%
13. To the question "What is your knowledge on the causes of global climate change and the projected consequences in Armenia?" 10,0% of the respondents answered good, 15.0% Satisfactory and 75.0% did not answer the question.
14. To the question "What is your knowledge on the adaptation measures of natural landscapes (pastures, hayfields and forest areas) under global climate change conditions?" 5.0% of the respondents answered "good", 10.0% "satisfactory" and 85.0% did not answer the question.
15. To the question "What is your knowledge on the adaptation measures of agricultural landscapes (arable land, orchards and vineyards) under global climate change conditions?" 5.0% of the respondents answered "good", 10.0% "satisfactory" and 85.0% did not answer the question.
16. To the question "Did your community previously organize informational training on adaptation of pastures, hayfields and agricultural lands under climate change?" 0.0% of respondents gave a positive answer, 95.0% gave a negative answer and 5.0% did not answer the question.
17. To the question "How do you think the increase in the level of knowledge and awareness of the population will contribute to the improvement of the activities aimed at the adaptation

of pastures and hayfields under the climate change conditions?" the following answers were given:
To a great extent -75,0%
To some extent -15,0%
Did not answer 10,0 %:

18. To the question "How do you see the chances of your involvement in the project's knowledge and awareness raising component?" 80.0% answered positive and 20.0% did not answer.
19. To the question "If positive, how do you imagine your participation in the project?" the following answers were given:
    c. 0,0%- involvement in the teaching staff
    d. 75,0% - involvement as a participant.

Table 8: The answers of the survey participants community schools to the questions included in the questionnaire

N	Questions included in the questionnaire	Answers
1.	Do you know that there is a functioning Specially protected area of nature /SPAN/ adjacent to your community?	Yes -46 No -16
2.	What are the values you know in the territory of the protected areas? Please underline (plants, animals, hydrographic, cultural, etc.)?	Plants– 52 Animals – 42 Hydrographic – 4 Historical and Cultural – 0 Other – 0
3	Do you use the natural resources within the area of the SPAN?	Yes - 42 No - 20
4	If yes, please highlight the ways of usage	Grazing - 22 Haymaking - 0 Gathering of edible plants and fungi - 29 Firewood harvesting– 18
5.	What is your knowledge on the causes of global climate change and the projected consequences in the Republic of Armenia?	Good-– 6 Satisfactory - 27 Did not answer – 29
6	What is your knowledge on the adaptation measures of natural landscapes (pastures, hayfields and forest areas) under global climate change conditions?	Good-– 6 Satisfactory - 8 Did not answer – 48
7.	What is your knowledge on the adaptation measures of agricultural landscapes (arable land, orchards and vineyards) under global climate	Good-– 6 Satisfactory - 16 Did not answer – 40

	change conditions?	
8.	How do you think the increase in the level of knowledge and awareness of the population will contribute to the improvement of the activities aimed at the adaptation of pastures and hayfields under the climate change conditions?	to a great extent – 31 to some extent -15 Did not answer -16
If you believe that raising the level of knowledge will help improving the adaptation of natural and agricultural landscapes, please answer which training topics would you choose		
1	The causes of global climate change and projected impacts in Armenia	Yes - 40 No -22
2	Adaptation to natural and agricultural landscapes (pastures, hayfields, forest areas, orchards, etc.) under the conditions of global climate change	Yes - 51 No -11
3	International experience in climate-wise "clever" methods of farming under climate change conditions and investment opportunities in Armenia	Yes - 39 No -23
4.	Efficient livestock management techniques	Yes - 16 No -46
5.	Other topics	New water-saving technologies, protection and use of herbs

The analysis of the survey results shows that:

1. To the question ''Do you know that there is a functioning specially protected area of nature /SPAN/ adjacent to your community?'' 74,2% respondents answered "yes" and 25.8% answered “no”.
2. To the question ''What are the values you know in the territory of the protected areas? Please underline (plants, animals, hydrographic, cultural, etc.)?” the following answers were given:
   Plants– 83,9%
   Animals – 67,8%
   Hydrographic – 6,5%
   Historical and Cultural – 0
   Other – 0
3. To the question “Do you use the natural resources within the area of the SPAN?” 67,8% of the respondents answered “yes” and 32,2% “no”.
4. To the question “If yes, please highlight the type of usage“ the following answer were given:
   Grazing – 52,4%
   Haymaking -0%
   Gathering of edible plants and fungi -69,0%

Firewood harvesting-42,9%

5. To the question "What is your knowledge on the causes of global climate change and the projected consequences in the Republic of Armenia?" 9,7% of the respondents answered "good", 43.5% "satisfactory" and 46.8% did not answer the question.
6. To the question "What is your knowledge on the adaptation measures of natural landscapes (pastures, hayfields and forest areas) under global climate change conditions?" 9,7% of the respondents answered "good", 12.9% "satisfactory" and 77.4% did not answer the question.
7. To the question "What is your knowledge on the adaptation measures of agricultural landscapes (arable land, orchards and vineyards) under global climate change conditions?" 9,7% of the respondents answered "good", 25.8% "satisfactory" and 64.5% did not answer the question.
8. To the question "How do you think the increase in the level of knowledge and awareness of the population will contribute to the improvement of the activities aimed at the adaptation of pastures and hayfields under the climate change conditions?" the following answers were given:
   To a great extent -50,0%
   To some extent -24,2%
   Did not answer 25,8%:

COMMENTS

Surveys among residents

1. Most of the respondents believe that climate change is seen in the region, which is mainly expressed by early spring frosts, torrential downpours, increase of temperature and decrease of precipitation.
2. The majority of respondents believe that the productivity of the natural and agricultural ecosystems is adversely affected by climate change.
3. Most respondents find that there are currently no effective measures to increase the adaptability of natural and agricultural ecosystems to climate change.
4. Most respondents have a positive attitude towards the implementation of programs aimed at the adaptation of natural and agricultural ecosystems in their communities and mainly prefer improvement of arable land, introduction of new irrigation technologies, and road rehabilitation works.
5. The survey participants have a low level of knowledge about the opportunities for adaptation to natural ecosystems.
6. The survey participants are positive about the idea of building solar dryers, non-heating greenhouses and solar water heaters in their communities, but they find it difficult to find common mechanisms for their joint use.
7. The vast majority of respondents know that their community borders to a specially protected area of nature and use the natural resources of the area.
8. Up to one-fifth of the respondents found that their knowledge of the measures aimed at the adaptation of natural and agricultural landscapes under the conditions of global climate

change is “satisfactory”, while 1/3 of the respondents found it difficult to answer the question.

9. Most of the interviewees are confident that there have not been previously organized informational trainings on measures for adaptation of natural and agricultural landscapes under the conditions of climate change in their communities.
10. 53.3% of respondents believe that raising awareness of the population will greatly assist in the improvement of the activities aimed at the adaptation of natural and agricultural landscapes to climate change, 31.4% believe that it will assist to some extent, and 15.3% have found it difficult to answer the question.
11. The survey participants generally find that the proposed teaching topics are acceptable.
12. Most participants want to participate, however, the topics selected by the communities and the age group of participants is somewhat different.
13. The following topics are most preferable in Urtsadzor community:
    i. Increasing the adaptation of natural and agricultural landscapes (pasture, hayfield, forest areas, arable land, orchards, etc.) under the global climate change;
    ii. International experience of climate-wise "clever" methods of agriculture management under the conditions of climate change and investment opportunities in Armenia;
    iii. Efficient livestock breeding practices.
14. The following topics are most preferable in Dilijan community:
    i. Increasing the adaptation of natural and agricultural landscapes (pasture, hayfield, forest areas, arable land, orchards, etc.) under the global climate change;
    ii. International experience in climate-wise "clever" methods of farming under climate change conditions and investment opportunities in Armenia;
    iii. Tourism and Ecotourism
15. The following topics are most preferable in Margahovit community:
    i. The causes of global climate change and projected impacts in Armenia
    ii. International experience in climate-wise "clever" methods of farming under climate change conditions and investment opportunities in Armenia;
    iii. Tourism and Ecotourism
16. The following topics are most preferable in Fioletovo community:

    i. The causes of global climate change and projected impacts in Armenia
    ii. International experience in climate-wise "clever" methods of farming under climate change conditions and investment opportunities in Armenia;
    iii. Efficient livestock breeding practices.

Survey among high school students

1. About the ¾ of respondents know that the community borders to a Specially protected area of nature and 67,8% uses the natural resources of the area.
2. 83.9% of pupils believe that the natural values of the Specially protected areas of nature are plants, while 67.8% that the animal world.
3. 67.8% of the respondents find that they use natural resources within the SPAN borders.
4. About 10.0% of the respondents are convinced that they have good knowledge of the causes of global climate change, as well as increasing the adaptation of natural and agricultural landscapes under the global climate change conditions.

5. 50.0% of respondents believe that raising awareness of the population will greatly assist in the improvement of the activities aimed at the adaptation of natural and agricultural landscapes to climate change, 24.2% of respondents believe that it will assist to some extent, and 25.8% have found it difficult to answer the question.
6. Generally the survey participants find that the proposed teaching topics are acceptable.
7. However, most of the participants are interested only in courses on the following topics "The causes of global climate change and projected impacts in Armenia", "Increasing the adaptation of natural and agricultural landscapes under the global climate change conditions; and International experience in climate-wise "clever" methods of farming under climate change conditions and investment opportunities in Armenia;
8. The training on the topic "Efficient livestock breeding practices" was mostly of no interest to the pupils.

Questionnaires were developed with which the surveys were conducted (Annex….)

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50. The following concrete outputs have been formulated for this component.

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 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;

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;

Farmer field school is an effective way to provide farmers with the skillset necessary for the modern market economy. Farmers are trained to analyze the environmental, natural and agricultural ecosystems at farmer field school which provides the opportunity for more rational decisions on climate change adaptation measures. Sustainable management of natural and agricultural ecosystems requires a sustainable knowledge and practice base that will enable future generations to develop an improved resource base. An integrated agricultural crop product aims to find better farming practices to generate higher returns, preserving the environment, natural ecosystems surrounding communities, and improving community health. To achieve this goal, farmer field schools will focus on the following four principles:

- Healthy product growth,
- Preservation of natural and agricultural ecosystems,
- Periodic observations in natural and agricultural ecosystems,
- Training of farmers by relevant experts.

Farmer field schools are mainly focused on cultivating healthy agricultural crops, which means:

- Use of species that are relatively stable towards diseases and pests and adapted to local conditions;
- Joint use of appropriate fertilizers (chemical and organic)
- Application of modern irrigation methods;
- Sustainable management of natural ecosystems.

The effectiveness of farmer field schools is largely conditioned by the development of monitoring and decision making skills. From this point of view, it is envisaged to carry out regular monitoring of natural ecosystems and cultivated areas of participants in farmer field schools.

Training will be carried out at all stages of plant growth.

Although there are no complementary training plans for farmer field schools, there are common elements on which the learning plans can rely on. These include:

- Analysis of natural and agricultural ecosystems;
- Special topics,
- Field experiments,
- Small field experiments,

The following topics are preferable for farmer field schools:

- Physiology and development of agricultural crops,
- Agrotechnical methods of healthy and profitable agriculture,
- Effective methods of protection against plant diseases and pests;
- Soil fertility management;
- Natural enemies of pests and diseases;
- Field observations
- Pesticides, including environmental and human security,
- Sustainable management of natural ecosystems.

An organization will be selected through a tender to carry out the works.

Output 3.2-3.3-3.4;

The selected organization will carry out the following works:

- Explore communities' needs and capacities;
- Develop a training and awareness-raising program,
- Develop topics for the project,
- Implement knowledge and skills training program,
- Develop a plan for dissemination of project materials, results, best practices,
- Disseminate project materials, results, best practices,
- Develop strategies for sustaining climate smart agriculture and LDN in target areas.
- Determine the existing non-governmental organizations, women, youth, environmental and other unions in the communities and develop capacity building plan for them.

Output 3.5: A monitoring system for land based adaptation measures and land degradation neutrality has been established for the target communities;

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LAND DEGRADATION INDICATORS FOR THE MONITORING SYSTEM UNDER CLIMATE CHANGE CONDITIONS

I. FACTORS CONTRIBUTING TO LAND DEGRADATION AND THEIR CONSEQUENCES

Each year anthropogenic impacts along with the climate change phenomena (stable increase of temperature, decrease of precipitation, increase of aboveground temperature, increase of temperature in 0-30 cm soil layer, decrease of absolute and relative air humidity level, etc.) lead to the exclusion of thousands of hectares of arable land and the decrease of forests and pastures in Armenia. This is conditioned by the following factors:

1. Urban development, which is particularly evident in the recent decades, in the light of active appropriation of new lands for urban development resulting in emergence of a large number of new disturbed sites. Geological processes such as landslides are significantly activating in the old disturbed sites;
2. Agricultural factors are related to the violation of agro-technical rules of cultivation leading to degradation of ten thousands of hectares of arable land and water erosion resulting in the exposure of slopes. According to preliminary estimates, the cultivable land area will decrease, due to poor condition of the irrigation system and high financial costs associated with its operation;
3. Disruption of irrigation and drainage networks (including abstraction of water by small HPPs during summer months) and failure of their renewal. The needs of the aquatic fauna are mostly not taken into account during the design and operation of small hydropower plants. While the impact of water regime changes on coastal and aquatic ecosystems and biodiversity has neither been assessed nor studied;
4. Road erosion- when erosion centers are formed at car wheel spaces of steep slopes;
5. Illegal logging, which is aggravated by relative availability of timber, increases in energy prices, low solvency of socially vulnerable population. The timber remains the main source of fuel for forest adjacent community population;
6. Mining, especially in case of open pit mining;
7. Pollution of soil with industrial and household waste materials; and
8. Violation of biological diversity.

The results of the studies conducted in the last decade by the Ministries of Nature Protection, Agriculture, Territorial Administration and Development, Energy Infrastructures and Natural Resources, Emergency Situations of the Republic of Armenia, regional administrations, National Academy of Sciences and other institutions have shown that, as compared to the previous period, the threats to ecosystems due to anthropogenic impact have not undergone major changes.

It should be noted that the loss of natural resources and the changes in ecosystem services are a result of cumulative impacts rather than an effect of one factor only.

II. LAND DEGRADATION NEUTRALITY

In recent years, the international community has been promoting the application of the principles of Land Degradation Neutrality (LDN). LDN implies improving land resources, targeted at increasing economic, social and environmental benefits. Land Degradation Neutrality is a state whereby the amount and quality of land resources, necessary to support ecosystem functions and services and enhance food security, remains stable or increases within specified temporal and spatial scales and ecosystems.

There are many options for achieving LDN. The combination of these options should take into account land degradation type, degree, course, size, land-based resources and the degree of self-renewal (natural properties) and national priorities, capacity priorities as well as prevention of land degradation, sustainable land management and rehabilitation of degraded lands.

Prevention and reduction of land degradation can be achieved through land use planning and implementation of international land management practices, taking into account the potential of land resources and self-rehabilitation capacity. The following interconnected actions are important for achieving land degradation neutrality:

1. Determine the spatial units and functional groups of land degradation neutrality.
2. Evaluate the type, size and degree of degradation, based on baseline data.
3. Determine the causes of land degradation and ways of its prevention, reduction and elimination.
4. Develop land degradation neutrality indicators
5. Develop institutional and technical capacities, incentive mechanisms and cooperation to address land degradation neutrality.
6. Ensure intersectoral cooperation and appropriate flow of financial resources to achieve land degradation neutrality.

III. IMPROVEMENT OF LAND MONITORING SYSTEM

At present, many organizations are engaged in the implementation of environmental monitoring at different levels and there is a need to coordinate data collection and processing process of these organizations.

The field of environmental monitoring is regulated by a number of legal acts, in particular:

Decision No 198-N of the Government of the Republic of Armenia from January 25, 2007,

Decision No. 1440-N of the Government of the Republic of Armenia from November 13, 2008,

Decision No. 1441-N of the Government of the Republic of Armenia from November 13, 2008,

Decision of the Government of the Republic of Armenia No 120-N from January 22, 2009,

Decision No 121-N of the Government of the Republic of Armenia from January 22, 2009,

Decision No. 276-N of the Government of the Republic of Armenia from February 19, 2009 and

Order No. 234-N approved by the Minister of Agriculture of the Republic of Armenia from 11.10.2007 "On approving the forms of collecting information required for State Forest Monitoring".

It is necessary to formulate a unified and systematic information database of monitoring data, which will provide a comprehensive assessment of the state of the environment and natural resources. Such information will coordinate public administration bodies in policy-making and governance decision-making.

Improvement of the environmental monitoring system will enable the definition of the ecological tension standards in Armenia and development of the appropriate assessment scale.

From this point of view, spatial imaging of land degradation, generation of integral spatial models, and compilation of information database can be done by introduction of geographic information systems. When developing a new method of environmental monitoring, it is necessary to place a great deal of attention on the use of remote sensing data, which can provide operative monitoring and prediction of droughts in arid and semiarid regions. Effective organization and implementation of land monitoring is of primary importance in improving the land degradation monitoring system, the key components of which are:

1. Implementation of laboratory testing of land monitoring by accredited laboratories.
2. Organization of land monitoring by the authorized state body in the field of land conservation and use, cooperation with territorial bodies and local self-governing bodies;
3. Monitoring of land pollution by chemical and radioactive materials, weathering, water logging, salination, landslides and other impacts contributing to land degradation.
4. Entry of monitoring data and summary information in the land monitoring database maintained by an authorized state body, which is a constituent part of the integrated environmental information database.
5. Ensuring accessibility of land monitoring data;

Monitoring of land degradation should be based on official data of statistical services that should be classified based on satellite imagery and be independent of data obtained from inquiries that should be updated and analyzed every year. It is essential to carry out land monitoring surveys and establish a land degradation rapid response system.

From this point of view, the criteria for monitoring are as follows:

1. The timeframe for each action;
2. Compliance of actions to the objectives;
3. Annual financial support for action;
4. A report on the implementation of each action for a specified period and format;
5. The level of involvement of stakeholders in actions being implemented.

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 of the Adaptation Fund.*

51. As highlighted above, the many environmental services and benefits that will be derived from this project will go beyond the country level and will contribute to a number of global environmental benefits. By promoting greater coordination, collaboration and enhancing capacity, the project will promote an exemplary enabling policy environment which will reduce many of the barriers to the successful mainstreaming of ecosystem resilience to climate change adverse effects. This will be done by developing principles for effective capacity building and institutional frameworks for sustainable management of natural and agricultural ecosystems. The protection of Armenia's rich portfolio of globally important wild relatives, and associated evolutionary processes represents a global good of vital importance to the future of the planet and its inhabitants. Such unique germplasm harbours important genetic traits that can help the world cope with climate change and contribute to future food security. In this respect it will identify and test 'best practices' which strengthen adaptability, stability and resilience of the natural resources. By generating local income and economic development that rewards the provision of ecosystem services in some of the most impoverished areas of Armenia the project will contribute to reducing poverty and enhancing well-being and thus reduce future pressure on vulnerable ecosystems.

52. The project will create age and social groups (i.e. youth, women) endowed with the necessary amount of knowledge was upon completion of the program will be able to disseminate their knowledge in other communities concerned. The project will strengthen the capacity of local media and environmental NGOs.

53. The programme will pursue a gender-sensitive approach whereby women's participation in planning will be strongly promoted (through targeted training within each component and other means) and thereby increasing the beneficiary families and communities ability to adapt and support each other in the process. Monitoring of this approach will be the responsibility of the Gender Specialist.

54. The programme will provide significant economic, social and environmental benefits to selected communities. Armenia faces multiple hazards and shows a wide variety of vulnerabilities to climate change, which will result in rural communities and ecosystems negatively affected. Rural vulnerability is due to low human and infrastructure conditions related to poverty.
An important analysis was made, in order to choose the most vulnerable regions in the country regarding each of the components selected. Aspects such as: poverty, provision of basic services, basic dimensions of human development, productive activities, important biodiversity spots, and current-future vulnerability. As a result, vulnerable groups benefiting from this programme include:

Beneficiaries

55. 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 approaches 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.

56. The number of direct and indirect project beneficiaries is estimated as follows:
    - Total number of beneficiaries (direct and indirect): 16000 people
        - Beneficiaries in communities adjacent to Khosrov Forest State Reserve: 4500 people
        - Beneficiaries in communities adjacent to Dilijan National Park: 12500 people
    - Beneficiaries benefitting from targeted capacity building: 300 people

Social benefits

57. The project has clear social benefits due to its holistic approach on supporting climate smart agricultural practices and supporting the livelihoods of the local communities through improved income opportunities.
    - Increase of capacities and adaptation capacity in all the components of the project. It is expected to train more than 300 beneficiaries on adaptation measures (50% women).
    - Active community participation. At least 4 communities and 11 rural settlements are beneficiaries of the adaptation measures implemented. Each of the activities involves the participation of organizations at the local level.
    - Capacity building among social groups. The project will improve the levels of understanding of climate risk and adaptation to climate change to:
        - More than 200 stakeholders
        - 4 community representatives (traditional leader, women and young groups)
    - Improvement of food and nutritional security in rural communities, through support to family farms, small and micro scale farms;
    - Efficient management of water resources for the benefit of the community;

- Better income opportunities in the target communities through the promotion of solar drier and solar heaters in combination with training on the marketing of the products on local and national markets by creating value chains for agricultural products and effective training to the local communities. The selection of pilot sites and beneficiaries will follow a pro-poor approach and particularly target women headed households.
- The proposed interventions are expected to have an impact on production yields of crops and fodder and thus provide additional income to the farming communities.

58. It is expected that the project will not have any negative social effects such as the resettlement of some communities, impact on the access to land and water resources or any discrimination due the participation (or exclusion) in project activities. The project will follow a consultative approach to the selection of stakeholders and beneficiaries, whereas a social and environmental management framework will be developed during the preparation of the project.

Economic benefits

59. Climate smart agriculture and sustainable land management projects - like this project - have different economic benefits, but in many cases some higher production costs than traditional agricultural projects. The quantification of the economic costs and benefits from sustainable land management are difficult to determine as the valuation of land, soil, forest, water resources and bio-diversity is challenging notably in data constraint environments. To capture the full economic value of land, soil, water resources and bio-diversity beyond the direct agricultural and production functions (e. crop and livestock related yields) their supporting and regulatory functions should be taken into account. Different initiatives from UNCCD, Global Environmental Facility and the Economic of Land Degradation project (ELD Initiative, 2013[9]) have tried to establish comprehensive cost benefit analysis for sustainable land management projects and have pointed at highly positive economic cost benefit rations. An economic cost benefit analysis would be conducted during project preparation. All in all economic benefits will arise from:
    - Yield increase for fodder, crops, livestock and related products. Without any intervention measures, it is expected that yields will further decrease by 10% in the next decade. A reduction in crop and milk yields (5% for milk yield in the target areas) has already been recorded in the previous decades.
    - Reduced production costs for example due to the reduced need of agricultural inputs;
    - Reduced costs for processing and value addition of agricultural products, e.g. through solar driers for fruit, vegetables and berries substantial energy savings and possibly higher market prices.
    - Increased efficiency of the production system, e.g. through the rehabilitation of parts of the irrigation system and thus reduced operating costs.

[9] ELD Initiative (2013). The rewards of investing in sustainable land management. Interim Report for the Economics of Land Degradation Initiative: A global strategy for sustainable land management. Available from: www.eld-initiative.org/

- Secondary economic benefits for example from increased local tourism potential and increased bio-diversity in the communities adjacent to Khosrov Forest State Reserve and Dilijan National Park.

Environmental benefits

60. The environmental services and benefits that will be derived from this project will go beyond the country level and will contribute to a number of global environmental benefits. Notably the protection of Armenia' rich and globally important bio-diversity will be an important environmental benefit. By support the livelihoods of communities adjacent to natural reserves and protected areas the land use pressure on the protected areas (such as uncontrolled grazing and wood collection) would reduce and help protecting the pristine biodiversity. Capacity building and awareness raising activities will contribute to a sustainable management of the protected areas. Environmental benefits include:
    - Soil preservation: One of the most important environmental benefits in the agricultural sector is soil conservation and decreased erosion, this will contribute to a reduction loss and increase of soil organic carbon.
    - Improved pasture management will increase the biodiversity in community and remote pastures.
    - Improved availability of water resources (groundwater and surface water) through an increased water use efficiency and reduced water losses in the irrigation system. Improvement of the protection of ecosystems protected areas;
    - Increased biodiversity and reduced pressure on biodiversity and land at Khosrov Forest State Reserve and Dilijan National park
    - Carbon sequestration through the conservation and increase of soil organic carbon.
    - Contribution to the voluntary target for land degradation neutrality;

61. Article 30 of the Constitution of the Republic of Armenia adopted in 2015 defines the equality of men and women. Article 86 of the Constitution defines that the main purpose of the state policy is to promote equality between men and women.

The main tool for achieving gender equality in the Republic of Armenia is the Law "On Ensuring Equal Rights and Equal Opportunities for Women and Men" adopted on 20 May 2013.

The Law "On Equal Rights and Equal Opportunities for Women and Men" defines main directions of the state policy aimed at ensuring gender equality, including gender equality guarantees within the state governance and public service, clarifies the forms of gender discrimination, policy development.

Based on provisions of the Law, the Government has initiated the development of a new Strategy on Providing Equal Rights and Equal Opportunities for Women and Men for 2017-2021. In relation to this programme Chapter VI. Funding for the implementation of the State Policy on Ensuring Gender Equality, Article 20: Funding for the implementation of the state policy on ensuring gender equality defines:
Financing of programs and activities provided by the state policy on ensuring gender equality is implemented through the state budget of the Republic of Armenia.

For the implementation of programs and activities by the state policy on gender equality, allocations from other sources not prohibited by law, may also be made from foreign states, international organizations, as well as allocations from other organizations (regardless of organizational and legal form) and individuals, donations and allocations, which are used exclusively to finance state, regional, and community development programs and measures to ensure gender equality.

According to the new Constitution Article 210, the new Electoral Code became effective on 1 June 2016. It provides clearer mechanisms for protection of women's rights in the political sphere which would contribute totheir more active participation in the political life of the country. More effective quota for women's representation has been prescribed (25% representation of women in elective bodies instead of 20%). At the same time, a gradual approach has been stipulated, and a higher quota has been prescribed for 2021 (30%).

Moreover, the rotation mechanism is also applied, according to which in case a female deputy quits her position or assumes another one, the latter should again be replaced by a woman. As a result of implementation of Action Plan "On Promoting Gender Balance among Candidates for Judges" the tangible results targeted at increasing the level of involvement of women in the judicial system of the Republic of Armenia are already noticed.

UNDP Armenia Country Office has developed Gender Equality Strategy (2016-2020) document. The objectives of this document are twofold:

i) introduce in UNDP Armenia a formal, standardized system to apply gender mainstreaming (GM) across programme and operations, in line with corporate gender equality policies and benchmarks; and
ii) "de-mystify" for the staff the practical application of "gender mainstreaming", "gender equality", and other gender-related concepts and policies.

The law on "On Ensuring Equal Rights and Equal Opportunities for Women and Men" guides the project's outcomes and promotes equality amongst all the population in the project impact zone. The project is in line with Adaptation Fund's gender policy[10]. This project prioritizes women and vulnerable groups within population, which is in line with the Paris Agreement and the Constitution of Armenia. Gender equity and equality are well promoted in the project as women and men both are direct beneficiaries of the project outcomes. The project will contribute to gender equality, through strategies to empower women and girls with concrete commitments to ensure equal rights, access and opportunities for participation and leadership in the project, and in community decision making.

A gender sensitive approach will be integrated in all training modules and awareness campaigns. Knowledge and awareness raising activities will make sure that women and

[10] Annex 4 TO OPG GENDER POLICY AND ACTION PLAN. www.adaptation-fund.org/wp- content/uploads/2016/04/OPG-ANNEX4_Gender-Policies-and-Action-Plan_approved-in-March-2016-1.pdf.

vulnerable group members have enough knowledge and can build resilience towards climate change.

Moreover, women and vulnerable group members will have direct economic benefits from adaptation measures. As a part of project components, the recovery of agricultural and natural landscapes, women will benefit from increasing productivity and efficiency of agricultural lands, as women are the main workforce in agriculture industry. Also increasing knowledge and awareness about climate change as well as adaptation would help women to plan their work more efficiently.

Activities envisaged by other component would also bring benefits to women and vulnerable groups. The establishment of eco-clubs in schools will have its contribution towards promotion of gender equality and equity. Boys and girls will attend the classes and trainings in the eco- clubs and the existence of the eco-clubs will promote equal participation and access to knowledge resources.

Through these actions the project will generate the following social and economic benefits for women:

1. Increased participation of women in decision-making process in community's development strategies
2. Increased awareness and knowledge for women on climate change and adaptation mechanisms.
3. Increased productivity and efficiency of agricultural lands, which will lead to increased income and improvement of livelihood for women.

Gender Mainstreaming

The gender mainstreaming approach for the project will therefore be focused on maximizing and ensuring women's active participation as well as engagement during consultations, trainings, and awareness programs.

A Gender Action Plan will be prepared during Inception to outline proposed activities and targets in line with the gender mainstreaming approach and maximize benefits to both men and women during project implementation and an outline is attached.

The Project's GAP will be implemented by Project Management Unit (PMU) which will contract a social Gender specialist in the Project team. The specialist will be responsible for incorporating the GAP into project planning and program, including awareness workshops and establishment of gender-disaggregated indicators for project performance and monitoring. PMU will include reporting on progress of GAP activities in quarterly progress reports to the NIE.

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

Cost-effectiveness

62. A strong focus on capacity building that involves the participation of relevant stakeholders at several levels, from government officials to technical experts and the communities itself will support the adoption of new technologies in the target communities and will thus ensure a

cost effective implementation of the project. Multiplier effects and the training of trainers or community champions will make it possible to have a relevant impact on a wider number of people who are indirectly involved in the project: especially through the dissemination of information, structured as a methodological tool, a wide number of citizens and civil society organizations will acquire new skills to better participate in the life of the community. Farmer field schools and peer-to-peer learning, that is a powerful way to share, replicate, and scale up what really works, by learning from the practical experiences of those who have gone through similar challenges. As an important knowledge management approach, knowledge exchange mechanisms are promoted among communities and organizations as well as capacity building, which will ensure adaptation on local planning processes as well as better decision-making by involving local stakeholders on topics such as climate change, resilience and adaptation in agriculture, water management. At the same time, the exchange of knowledge will lower the operational costs and increase benefits due the opportunity of replicating best practices and lessons learned amongst communities.

63. The project will be implemented in a highly cost effective manner through the application of competitive procurement of goods and services where this would be required (e.g. the competitive procurement of agricultural inputs such as seeds and tools) conform the rules for public procurement of the government and guidance for fiduciary management of the Adaptation Fund. More importantly, the project will mainly involve community works, the local sourcing of input and labor and will limit, where this would be feasible, the costs for international consultants or import of material. The installation of locally produced light weight green house, and local construction of solar driers are cost effective and positive value for money on the local market. A detailed analysis will be conducted during project preparation.

Table 5: Benefits from proposed interventions, alternatives and reasons for not adopting

Benefits from the proposed intervention	Alternative measures and reasons for not adopting
Component 1 • The mentioned interventions can build climate resilience through managing competing land-use systems, while at the same time reducing poverty, enhancing biodiversity, increasing yields and lowering greenhouse gas emissions as well as, increases nutrient cycling, water redistribution, provides shade, controls erosion, increases carbon stocks. • Capacity building for diversifying agriculture, food production through practices such as agroforestry, drip irrigation system for orchards, sustainable base for fodder, improvement of crop yield of pastures and hay-meadows etc., which will increase agricultural productivity. • The participatory approach involving local women and men in managing natural resources and adaptation planning will lower management costs and will sustain the outcomes over time. • Renovation of main irrigation water supply systems which has several benefits: -Reduction in the water leakages in the system -Crop yield increase -Production cost price reduction -Reduced cost for the maintenance -Increased water use efficiency	• Conventional farming systems share many characteristics: - Large capital investments in order to apply production, investments that local communities are not able to apply. - Lack of financial resources for the improvements of lands and soil quality etc - External energy inputs; among others - Conventional techniques increased problems as the growing pressure on land, and rapid deforestation. - Surface irrigation increases water usage and losses - Contributes to soil erosion
Component 2 • Introduction of energy saving technologies such as solar water heaters, solar dryers and non-heated greenhouses include the following benefits: - promote energy saving, decrease the use of gas and wood, decrease the number of greenhouse gas emissions - They are efficient. Approximately 80% radiation is turned into heat energy. - Reduction in the costs for electric energy, community and population's budget - Promotion of job creation for women - Reduction of crop loss, storage improvement	• Conventional methods by the use of gas and electric energy, wood etc. are 4-5 times expensive; • The implementation of conservation measures through a top town approach limiting for example grazing without the provision of alternative income opportunities has proven not to be successful in the past.
Component 3 • The participatory approach involving local women and men in managing natural resources and adaptation planning will lower management costs and will sustain the outcomes over time. • Strengthening the farmers and community groups' organizational capability and increasing their knowledge on issues related to climate change and variability will allow the beneficiaries to adapt to new climate scenarios if needed and ultimately reduce their dependence on external interventions.	• Top down introduction of new technologies has proven not to be successful in most farming communities. Instead of a prescription of different farming methods, the training, participatory planning and provision of different options for the farmers to choose from would very likely be more successful.

Table: Comparative analyses of environmental risks and cost-effectiveness of interventions

OPTIONS	FERTILIZATION	COST (USD)	ENVIRONMENTAL RISKS	OPTED VERSION	NOTE
INCREASING ADAPTIVE CAPACITY OF ARABLE LANDS TO CLIMATE CHANGE(CALCULATION IS DONE FOR ONE HA)					
Traditional 1	$N_{300}P_{300}K_{150}$ kg/ha	280	Contamination of natural resources (water, soil), intensive growth of harmful plants, increased the content of nitrates in the harvest, deterioration of health of the population, violation of ecological balance of environment.	Alternative 2 Alternative 6	The opted version is environmentally safe are environmentally safe as the mineral fertilizers are selected with the amount that cannot adversely affect the quality of the crops and the health of people. At the same time, these options will help restore the balance of macro-elements in the soil that has been disturbed over the last 30 years since phosphoric and potassium fertilizers have not been used. During irrigation or rainfalls celiolite absorbs water, which later is used by the plants. Celiolite compasses available calium, which in its turn is again utilized by the plants.
Alternative 1	5t/ha biohumus	400	No environmental risks		
Alternative 2	$N_{100}P_{100}K_{50}$+ 1.5 t/ha, biohumus	228	Environmental risks are minimized		
Alternative 3	1.0t/ha Biohumus + 1t/ha zeolites	225	No environmental risks		
Alternative 4	3t/ha "ORGANOMIX"	295	No environmental risks		
Alternative 5	$N_{100}P_{100}K_{50}$ kg/ha + 1.0 t/ha, "ORGANOMIX"	210	Environmental risks are minimized		
Alternative 6	$N_{100}P_{100}$ kg/ha + 1.5 t/ha, "ORGANOMIX + 0,6 t/ha zeolites	245	No environmental risks		
Traditional 2	Plow in autumn(not to cultivate for 1 year) + 25t/ha manure + cultivation in spring and leave the land to rest until autumn	377	No environmental risks		In terms of soil fertility, the option is effective, but cannot be applied because farmers will be deprived of harvest and livelihood during that year.
INCREASING ADAPTIVE CAPACITY OF PASTURES TOI CLIMATE CHANGE (CALCULATION IS DONE FOR ONE HA)					
Traditional	$N_{200}P_{300}K_{150}$ kg/ha	230	Contamination of natural resources (water, soil), intensive growth of harmful plants, risk of animal poisoning, violation of the ecological balance of the environment, increased content of nitrates and heavy metals in milk	Alternative 3 Alternative 6	The opted version is environmentally safe, the effectiveness is high,

			and meat in spring		the balance of macroelements is restored in the soil
Alternative 1	4 t/ha "ORGANOMIX"	392	There are no environmental risks, but the restoration of the grassland is very slow		
Alternative 2	$N_{50}P_{100}K_{50}$ kg/ha +1,0 t/ha, "ORGANOMIX"	245	There are no environmental risks, but the restoration of the grassland is very slow		
Alternative 3	$N_{50}P_{70}K_{50}$+1,0t/ha "ORGANOMIX" + additional sowing	217	There are no environmental risks and the grass cover is quickly recovered		
Alternative 4	4t/ha Biohumus	368	There are no environmental risks, but the restoration of the grassland is very slow		
Alternative 5	$N_{50}P_{100}K_{50}$+ 1,0 t/ha biohumus	198	There are no environmental risks, but the restoration of the grassland is very slow		
Alternative 6	$N_{50}P_{70}K_{50}$+ 1,0 t/ha+Biohumus additional sowing	203	There are no environmental risks and the grass cover is quickly recovered		
INCREASING ADAPTIVE CAPACITY OF HAY MEADOWS TO CLIMATE CHANGE (CALCULATION IS DONE FOR ONE HA)					
Traditional	$N_{200}P_{300}K_{150}$ kg/ha	285	Contamination of natural resources (water, soil), intensive growth of harmful plants, increased content of nitrates in the harvest, violation of ecological balance of environment.	Alternative 3 Alternative 6	The opted version is environmentally safe, the effectiveness is high, the balance of macroelements is restored in the soil
Alternative 1	5 t/ha "ORGANOMIX"	490	There are no environmental risks, but the restoration of the grassland is very slow		
Alternative 2	$N_{100}P_{150}K_{60}$ +2,0 t/ha "ORGANOMIX",	276	There are no environmental risks, but the restoration of the grassland is very slow		
Alternative 3	$N_{100}P_{100}K_{60}$ + 1,0 t/ha "ORGANOMIX" + additional sowing	246	There are no environmental risks and the grass cover is quickly recovered		
Alternative 4	5 t/ha biohumus	470	There are no environmental risks, but the restoration of the grassland is very slow		
Alternative 5	$N_{100}P_{100}K_{60}$ +1,0 t/ha biohumus	216	There are no environmental risks, but the restoration of the		

			grassland is very slow		
Alternative 6	$N_{100}P_{100}K_{60}$ + 1,0 t/ha biohumus + additional sowing	227	There are no environmental risks and the grass cover is quickly recovered		
INCREASING ADAPTIVE CAPACITY OF DEGRADED SLOPES TO CLIMATE CHANGE (CALCULATION IS DONE FOR ONE HA)					
Traditional	1000u^3 black soil + additional sowing	56 000	There are no environmental risks, but it is likely that in the case of heavy rains in spring, land will be eroded and the most degraded segments will again be naked	Alternative 2	The version is opted for areas whose degree of degradation does not allow the landscape to be restored in its previous form
Alternative 1	500 u^3 black soil + 5t/ha biohumus + additional sowing	21960	There are no environmental risks, but it is likely that in the case of heavy rains in spring, land will be eroded and the most degraded segments will again be naked		
Alternative 2	Creation of forest park /2500 plants/ and 5 times manual irrigation	10500	There are no environmental risks		
REHABILITATION OF FIELD TRACKS (CALCULATION IS DONE IN 1 KM)					
Traditional	No work is done in the area or a pile of gravel is poured into some parts of the area	0-200	Residents do not use arable lands and hay meadows. The arable lands are turned into pastures. Pressure on the areas that are relatively accessible increases. As a result of exploitation, degradation of pastures and grassland is accelerating.	Alternative 2	The pressure on community-based natural and agricultural ecosystems increased. The communities may use the savings on the rehabilitation of roads to remote pastures and create conditions for the adaptation of community degraded areas.
Alternative 1	Only smoothing/levelling is done	500	Access to arable lands and hay meadows is limited because heavy rainfall observed due to climate change disturbs the road soil cover while the trucks cause deep gaps along the road. Next year the pressure on natural and agricultural ecosystems increases. The pressure on natural and agricultural ecosystems would increase for the following year.		
Alternative 2	Levelling is done metalling in some parts and installation of rainwater removal pipes	7000-7900	There are no environmental risks		
IRRIGATION WATER SAVING MEASURES (CALCULATION IS DONE FOR 1 KM)					
Current state	Irrigation water system is not being rehabilitated or is done partly in the most	0-500	Irrigation water lose is constantly increasing. Agricultural lands remain out of cultivation and degrade. Residents increase the pressure on natural ecosystems to	Alternative 2	Irrigation water is used economically. Residents have the

	damaged parts		gain income.		opportunity to irrigate new areas, get more incomes, and reduce the pressure on natural ecosystems.
Alternative 1	Complete rehabilitation of irrigation network	1000-1500	There are no environmental risks, but in conditions of climate dampness and high summer temperatures, irrigation water will not meet the needs of the residents.		
Alternative2	Rehabilitation of the most damaged parts of irrigation system and introduction of drip irrigation system	2000-2500	There are no environmental risks		
INVESTMENT IN HEAT AND DRY RESISTANT NEW CROPS AND SEEDS **(CALCULATION IS DONE FOR 1 HA)**					
Traditional	No work is done in the area. People in the rural communities proceed cultivating old sorts and don't diversify the assortment.	850-930	There are no environmental risks	Alternative 1	People in rural communities get high income, hence improving their social- economic condition.
Alternative 1	People in rural communities cultivate new crops and sorts, while using organic fertilizers.	1150-1350	There are no environmental risks		

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

64. The aims and objectives of the program are consistent with the 3rd Communication on Climate Change and the Intended Nationally Determined Contributions (INDC) of the Republic of Armenia under the UN Framework Convention on Climate Change[11] (UNFCCC), the government's National Biodiversity Strategy and Action Plan (NBSAP) under the UN Convention on Biological Diversity (CBD), and the National Strategy and Action Plan under the UN Convention to Combat Desertification (UNCCD) in Armenia.

The development of the Third National Communication of the Republic of Armenia on Climate Change and submission to the Conference of the Parties to the Convention is the country's basic obligation. This Communication includes information on emission of greenhouse gases in the country and their removal from the atmosphere for the period covering 2007-2012, as well as vulnerability assessment and different adaptation measures in various sectors including water, agriculture, settlements and infrastructure, human health ecosystems and biodiversity.

Climate change adaptation is a priority issue for the Republic of Armenia. As a mountainous, landlocked country it is characterized by the vulnerability of ecosystems, arid climate, active exogenous and desertification processes, and frequent natural disasters. These make Armenia more sensitive to current and projected climate change impacts. This National Communication also describes the position of the Republic of Armenia for addressing climate change issues and measures implemented and planned, as well as the country's needs for further steps and activities.

Since the date of adoption of the UNFCCC, the accumulation of greenhouse gases in the atmosphere and the global temperature in lower layers of the atmosphere continue to grow; therefore, it is obvious that Armenia should take expeditious and stronger measures to reduce and limit greenhouse gas emissions.
Adaptation to climate change is a priority for Armenia because of the high vulnerability of its mountain ecosystems to climate change, and its geographic location in the arid zone with no access to the sea. Therefore, Armenia is involved in the informal negotiating group of 'landlocked mountainous countries'. The most vulnerable sectors are agriculture, water resources and natural ecosystems.

With respect to adaptation, Armenia has defined and continued to support 'ecosystem approaches'. These approaches, among other things, allow us to overcome uncertainties in predicting climate change, and provide synergies with other global and regional environmental conventions.

[11] UNFCC Protocol Decision No 41, 10 September, 2015

The latest official communication by Armenia in relation to climate change is the Intended Nationally Determined Contributions (INDC) of the Republic of Armenia under the UNCCC.
The Republic of Armenia has ratified the UN Framework Convention on Climate Change (UNFCCC) on May 1993 and as a developing country not included in Annex I to the Convention. In December 2002, Armenia ratified the UNFCCC Kyoto Protocol.

The geographical location of the Republic of Armenia (landlocked mountainous country with vulnerable ecosystems) and the country's need to ensure its national security, necessitates the prioritization of climate change adaptation.

The Republic of Armenia stated its position on the limitation of greenhouse gas emissions in subsequent national communications to the UNFCCC and in the Republic of Armenia's Statement on Association with Copenhagen Accords:

1) In relation to low carbon development Armenia describes the term "fairness" by applying the UNFCCC definition of "common, but differentiated responsibility", which considers the different levels of historical responsibility among countries in contributing to the increase of greenhouse gas concentration in the atmosphere, leading to climate change.

2) The climate change mitigation actions should not reverse the social and economic trends, but contribute to the socioeconomic development of the Republic of Armenia. These actions must be based on an "ecosystem approach", which is preferred by the Republic of Armenia, since it allows to maximize the synergies between mitigation and adaptation actions in most sectors of the economy, facilitating fair regional cooperation and contributing to solidarity.

One of the underlying principles of Intended Nationally Determined Contributions (INDC) of Armenia is to apply an ecosystem-based approach to mitigation and adaptation actions, giving preference to balanced and combined actions.

The following are basis and approaches to adaptation:
1) Adaptation strategy and contributions are based on the requirement of the UNFCCC Article 2 "Objective", which stipulates to restrain climate change within timeframe sufficient to allow ecosystems to adapt naturally to climate change. Thus, the natural ecosystems adaptation approach in INDC is considered pivotal for Armenia's adaptation strategy and actions (contributions), and a basis for the development of the national adaptation plan.

2) The Republic of Armenia embraces the ecosystem approach for adapting to climate change. The approach is in harmony with the environmental policy of the country, can ensure synergy with other international environmental conventions and treaties, will lay the ground for inter-sectoral coordination, and will support establishment of cross-border cooperation and solidarity environment.

3) Adaptation activities will be prioritized based on the most vulnerable sectors to climate change:

- Natural ecosystems (aquatic and terrestrial, including forest ecosystems, biodiversity, and land cover)

- Human health
- Water resource management
- Agriculture, including fishery and forests
- Energy
- Human settlements and infrastructures
- Tourism

14 main strategic and other documents have been developed in Armenia, which are directly connected with biodiversity and agro-biodiversity conservation and to which the proposed project intervention relate:

i. 1. Republic of Armenia 2014-2025 Strategic Program of Prospective Development. The objective of the strategy in environmental sector comprises improvement and modernization of the legislative and regulatory framework for environmental policy, reduction of corruption risks in the field of environmental management, prevention of current negative trends in land degradation, carrying out works on improving the management system of the SPNAs, development and implementation of the National Forest Program, development of baseline water resources management plans and decentralization of management processes, identification of common approaches and standards for the improvement of the environmental monitoring system.

ii. 2. Program of the Government of the Republic of Armenia (2017-2022). The objective of the strategy in environmental sector is that the activities of the Government of Armenia for the coming 5 years will mainly focus on continuous improvement and enhancement of the environmental management system, reduction of corruption risks, protection and sustainable use of water resources, atmospheric air, soil and underground resources.

iii. 3.Second National Environmental Action Programme of the Republic of Armenia (2008), which includes a number of actions concerning biodiversity conservation (inventory of biodiversity valuable areas, establishment of biodiversity monitoring system and database, assessment of the resources of the most significant flora and fauna species, genetic resources management etc.);

iv. 4. Strategy of the Republic of Armenia on Conservation, Protection, Reproduction and Use of Biological Diversity (2015), the main goal of the strategy is to ensure conservation, sustainable use and regeneration of the landscapes and biological diversity of the Republic for sustainable human development;

v. 5. Strategy and state program of conservation and use of specially protected nature areas of the Republic of Armenia (2014). The main objectives of the in-situ conservation of biodiversity have been enlarged and clarified here. The action plan covers 5 chapters: improvement of legal field / legislation, improvement of management system, enlargement of PNAs network, improvement of financial- technical mechanisms, and improvement of staffing;

vi. 6. National Action Programme to Combat Desertification in Armenia (2014), which will address pressures from habitat loss, land use change and degradation, and unsteady water use, reduced. Minimise the rate of loss and degradation of natural habitats. Promote, conserve and restore the main forest ecosystems. Promote, conserve and restore the main wetland ecosystems. Restore the landscapes and their biodiversity degraded due to industrial activity;

vii. 7. Community Agricultural Resource Management and Competitiveness Project (2015-2020), which aims to support the improvement of productivity of pasture and livestock systems in selected 100 mountainous and border communities, to support the capacity building of local producers and processors involved in the value chains of important agricultural products for the country, improve agricultural advisory and animal health services.

viii. 8. "National Strategy on Human Rights Protection (2012)". The strategy has the following main objectives: a) protection and development of human rights and fundamental freedoms, b) ensuring efficient mechanimsm for the protection of each person's rights and freedom under the jurisdiction of the Republic of Armenia c) Improvement of existing legislation and proper application ensuring in line with international standards d) public awareness rising on human rights and their protection methods, e) promoting the protection of one's own rights.

ix. 9. Social-Economic Development Program of the RA Ararat marz (2015-2018), RA Lori marz (2014-2017) and RA Tavush marz(2017-2025). The objective of these 3 programs is to ensure the continuous development of 3 marzes with modern approaches. Project implementation will contribute to facing the challenges by rural and urban communities of marzes and will ensure the solution of priority issues. Strategic directions of marzes' economy, their development mechanisms, prospects for development and expected outcomes are clearly outlined in the programs. Programs will serve as platforms to link all investors, stakeholders, international and local donor organizations in the marzes.

x. 10. GEF-6 National Portfolio (2015) – Country priorities have been clarified on which project package have been developed which is planned to be implemented under STAR and out of the system of transparent allocation of resources (STAR).

xi. 11. Technology Need Assessment (TNA) (2015-2017). Armenia is actively involved in that should ensure adequate technological support and create a favorable environment for technology development and transfer. The process of TNA is the continuation of systematic research on climate change in the RA. The TNA Project provided a great opportunity for RA to perform country-driven technology assessment to identify environmentally sound technologies that might be implemented with a substantial contribution in addressing climate change mitigation needs of the country. The reports “Technology Action Plan for Mitigation Technologies” and “Technology Action Plan for Adaptation Technologies” have been developed.

xii. 12. Gender Equality Strategy (2016-2020) UNDP Armenia Country Office. - The objectives of this document are two fold: (i) introduce in UNDP Armenia a formal, standardized system to apply gender mainstreaming across programme and operations, in line with corporate gender equality policies and benchmarks; and (ii) “de-mystify” for the staff the practical application of “gender mainstreaming”, “gender equality”, and other gender-related concepts and policies.

xiii. The Law "On Ensuring Equal Rights and Equal Opportunities for Women and Men" adopted 20 May 2013 - The Law "On Equal Rights and Equal Opportunities for Women and Men" defines main directions of the state policy aimed at ensuring gender equality, including gender equality guarantees within the state governance and public service, clarifies the forms of gender discrimination, policy development.

Other projects.

I. Solar powered irrigation systems for climate-smart farming. The project is implemented by Spitak's "Houso Luys" NGO and GEF (2017- 2018).
II. Solar power for energy autonomy and forest conservation in Tavush region/SLM project funding. The project is implemented by "Bridge of Hope" NGO and GEF (2017- 2018).
III. Implementation of "Intended Nationally Determined Contributions" of the Republic of
IV. Armenia in rural communities. The project is implemented by the "Khazer" ecological and cultural NGO and the GEF (2017- 2019).
V. The Urtsadzor Eco-training Center: Improving Capacity of Local Villagers for Sustainable Use of Biodiversity Resources. The project was funded by the GEF (2012-2014) funded by the Wildlife and Cultural Assets Fund.
VI. Improving living conditions through the use and protection of agro-biodiversity in rural communities of Armenia. The project is implemented by the Ministry of Nature Protection of the Republic of Armenia, funded by the Global Ecological Fund and with the support of the United Nations Environmental Program (2015-2019).
VII. Oxfam in Armenia. Since 1994, the Oxfam Armenia office has been implementing a wide range of humanitarian and development programs in over 165 rural communities throughout the country, closely cooperating with dozens of local NGOs, local self-governing bodies and provincial authorities. Oxfam Armenia has established 19 agricultural cooperatives in Tavush and Vayots Dzor marzes for six decades, of which six are women's cooperatives. Two fruit and vegetable processing factories, 4 fruit and vegetable refrigeration complexes were built and put into operation, 21 greenhouses were set up.

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*.

65. There are no relevant national technical standards for tree planting, forest restoration or conservation agriculture related to climate change in Armenia. However, in the stage of the complete program elaboration, the Standardization Sphere Codes and Names should be based on the Armenian Standards Classifier. The following sections are included in the preliminary study program.

Standardization codes and names according to Armenian Standards Classifier

Code 13. Environment protection. Human protection from environmental impact. Security

Group Code	Name
13.020	Environmental protection
13.030	Waste
13.040	Air quality
13.060	Water quality
13.080	Soil quality, agronomics
13.100	Safety of professional activity. Industrial hygiene
13.120	Everyday life security

Code 65. Agriculture

Group Code	Name
65.020	Farming and forestry
65.020.30	Livestock and animal breeding
65.040.30	Greenhouses and other structures
65.060	Agricultural machinery, property and equipment
65.080	Fertilizers
65.120	Animal feed

Code 67. Food technology

Group Code	Name
67.020	Processes in food industry
67.040	Food in general
67.050	General methods for food checking and analysis
67.080	Fruits, vegetables
67.100	Milk and dairy products
67.220	Spice. nutritional supplements

As such, international best practice standards will be followed throughout the proposed project. Environmental impact assessment or social and environmental management frameworks will be formulated during project preparation in accordance with the law of the republic of Armenia. No items requiring significant mitigation measures were noted. Interventions designed to provide technology transfer, training or that include local community participation will be conducted in adherence with Armenia's labour codes and gender equality targets.

As mentioned previously, it is envisaged to carry out design and estimation during the implementation phase of the Project with the subsequent expertise of urban planning documents and EIA process.

The expertise of urban planning documents examines the compliance of the project with the RA laws, legislative acts and existing technical standards.

Article 16 of the RA Law on Urban Development regulates the system of regulatory-technical documents which is a means of state regulation of urban development activities. It defines the necessary norms, rules and indicators for ensuring reliability, environmental protection, fire protection, sanitary- hygienic conditions, mobility of disabled persons and others, as well as conditions of quality assurance during the design, implementation and operation phases together with requirements set for facilities, separate structures, buildings, constructions or construction materials.

The legal system of urban development includes the regulatory-technical documentation which serves as a basis for expertise, supervision of urban development activities and resolution of disputable issues. The implementation of the requirements of the regulatory-technical documents is mandatory for the entities involved in urban development activities.

The compliance of the designs with the technical standards of the Republic of Armenia is regulated by the decision of the Government of the Republic of Armenia N 96 "on approving the procedure for expertise of urban development documents" from February 2, 2002 . During the construction phase, the supervision is conducted by a certified technical supervisor who supervises the quality of the construction work, while the control is exercised by the designing organization which controls the compliance of the work to the design.

Technical supervision and copyright supervision is carried out under N-41-N decree of the Minister of Urban Development, 16 June 2008.
Improvement of arable lands, meadows and pastures is regulated by the RA Land Code and government decisions. Article 2 of the Land Code concerns the state regulation of land relations. The implementation of projects and integrated investment policies concerning increase of land fertility, land-use, protection and agricultural utilization is regulated by Item 5 of the abovementioned article. Improvement of pastures and meadows is implemented in accordance with the requirements of decisions N 1477-N from 28.10 2010 and N 389-N from 14.04.2011 of the government of the Republic of Armenia.

Restoration of landscapes is carried out within the framework of RA strategy on landscape conservation, management and planning and in accordance with RA Government protocol decision N29 from 19 July, 2012 on "Approving the Strategy of Landscape Protection, Management and Planning and Prior and Mid-term Activities Arising from it" arising from the requirements of the European Landscape Convention ratified by the RA National Assembly in 2004. EIA expertise

is carried out according to the RA Law "On Environmental Impact Assessment and Expertise" adopted by the RA National Assembly on 21.06.2014 .

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

66. There is no duplication of project funding with activities or projects support by other funds or the government. 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 eco-agriculture 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.
67. In Armenia the GEF SGP officially started in November 2008 with appointment of the GEF SGP National Coordinator. In May 2009 the SGP country programme Strategy and Operational Frameworks were developed and adopted. For the current operational phase (2015-2018) the country programme addresses the following GEF thematic areas:

- Conservation and sustainable use of biological resources;
- Combating land degradation;
- Mitigation of climate change;
- Protection of international waters;
- Phase out of POPs and other harmful chemicals.

The SGP Armenia accepts applications from registered national NGOs without foreign founders regularly throughout the year. Maximum size of the grant cannot exceed US$50,000 equivalent. The GEF SGP does not provide core funding of a project, i.e. – any grant provided by the Programme should be additional, incremental in nature. It is a commitment on the part of SGP to the GEF Council to ensure 1:1 co-funding ratio, evenly divided between cash and in-kind (work, use of own machinery, materials etc.). Applications can be submitted from all regions of Armenia. These programs can only address local environmental issues that are presented in thematic areas. The SGP does not address complex measures to increase the adaptability of ecosystems and landscapes in climate change. The concept presented by us can not be repeated or similar to the GEF SGP programs as it incorporates complex activities that are targeted at enhancing the adaptability of ecosystems, natural and agricultural landscapes. To achieve this goal, various activities will be undertaken to improve the socio-economic situation of the population, to strengthen the capacity of knowledge, public organizations, energy efficiency in the public sector, diversification of agriculture and adaptation of degraded territories.

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

68. Component 3 of the project is related to the increase of knowledge and awareness of various target groups of the population. During the preparation of a full pledged project document the target groups will be finally specified along with their capacity building needs on which training programs will be developed. Particular attention will be paid on the dissemination of

knowledge during and upon completion of the project. For this purpose individual target groups consisting of both women and men and youth will be formed in each community whose members (mainly teachers, specialists of regional agricultural support centers, municipal employees) will be able to disseminate their knowledge among other interested groups. For other target groups the training program will focus on the clarification of the practical problems that are more interesting and are most in-demand for wide layers of the population. After each training course evaluations will be carried out by participants and experts. Positive and incomplete aspects of the trainings will be revealed based on which recommendations will be developed to improve the effectiveness of such courses.

- Knowledge and awareness component will also focus on the dissemination of best practice through mass media and local self-government bodies. This event will be supported by the elaboration, publication and dissemination of public information leaflets and booklets in the communities of the marz. Since the program provides a wide variety of events, which ultimately should increase the level of adaptation of ecosystems to climate change specialists on agriculture, energy, sustainable management of natural and agricultural ecosystems will participate in the trainings whose involvement in the project will contribute to summarizing and disseminating best practice in other regions of the Republic.

At project development stage, EPIU has adopted the Adaptation Fund principle of that knowledge is the understanding of a reality based on people's experience, analysis, and exchange and to be transmitted, knowledge needs to be captured and systematized. Though Knowledge management (KM) activities can be carried out in a variety of ways based on the environment and resources available, the following key concepts; however, are essential for any KM path: A KM strategy sets the long-term direction, scope, and objectives (short- and long-term) that are systematically pursued and eventually achieved through proper resource planning. It includes an action plan to achieve the goal of learning from experience and sharing that knowledge with all stakeholders and with the global community as reference for future projects.

During the first stage of project implementation professional consulting organization will be selected which will address the provision of synergy, transparency, participation, and inclusion, flexibility, relevance, as well as cost-effectiveness of the activities.

The development of KM plan will include the following steps:
Step 1: Analyze existing knowledge, data, and communication products as well as media
Step 2: Design of the KM plan (Actions to be identified for completing
Step 3: Implementation and Monitoring of KM plan (Actions to be identified for completing
Step 4: Evaluate, generate lessons learned, and disseminate (Actions to be identified for completing

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 of the Adaptation Fund.

65. EPIU along with the Ministry of Nature Protection, as well as Climate Change Information Center, UNDP Armenia office have worked in close coordination for the formulating this project concept. During the development of this concept proposal, the various stakeholders have been consulted and consensus has been reached with regard to specific needs on adaptation actions for each of

the sectors selected. In each of the four target communities – Urtsadzor, Dilijan, Margahovit and Fioletovo – project preparation meetings and stakeholder consultations were conducted in 2017 with the local population. The heads of Eco-education and donor funded project implementation division of EPIU visited the possible project areas to present in the communities the goals of the Adaptation Fund, to have discussions on topics such as needs at the community level, the most vulnerable areas, the current actions regarding these issues and general information about the country's climate threats and the country's vulnerability. The majors and the community leaders assigned their assistants and advisors to maintain contacts and consultations with project partners throughout the project design in order to feed into technical design and to refine outputs and activities, as well as provide any information needed to EPIU for the design of the project. The consultation process started since the beginning of the concept proposal formulation. This first bottom-up approach allowed the NIE to establish the main adaptation activities that were considered effective and possible with the available funds.

66. The components of the concept proposal were selected at the National level, by the Third National Communication on Climate Change and the Intended Nationally Determined Contributions (INDC) of Armenia and the geographical scope was selected considering the vulnerability, adaptation capacity and other important aspects.
By the order of EPIU director dated May 18, July 6 staff of EPIU headed by the Deputy director have been sent to communities to have consultations and discussion with all the stakeholders, vulnerable groups that are directly related to project objectives. Stakeholders involved in the consultation process were given drafts of the programme concept proposal, so that comments and suggestions of improvement were collected and addressed in the final draft.
67. All meetings, discussions, and presentation of project conceptual provisions were made in a way that all stakeholder groups in that community were represented. It became possible because we had previously studied the statistics of all communities and had a clear understanding of the social and demographic situation. Equal representation of women was also a mandatory condition. In addition to women's equal involvement, we have paid great attention to their suggestions which clarified a number of actions in the concept of the project.

During the June-August months, at the stage of developing the full package of the project, have been organized many meetings and discussions in the regions, which is presented in the table below:

Stakeholder Consultation Process

CONSULTATION	DATE	PLACE	Objective/Purpose	PARTICIPANTS
Meeting	13.06.2018	Urtsadzor	Discussion on objectives and planned activities of the project	10 participant, including 3 women
Meeting	13.06.2018	Urtsadzor school	Discussion on objectives and planned activities of the project	18 participant, including 17 women
Meeting	13.06.2018	Shaghap	Discussion on objectives and planned activities of the project	16 participant, including 5 women
Meeting	17.06.2018	Urtsadzor	Discussion on the planned activities of the project	11 participant, including 8 women
Meeting	18.06.2018	Urtsadzor	Discussion on the planned activities of the project	5 participant, including 5 women

Meeting	18.06.2018	Urtsadzor	Discussion on the planned activities of the project	19 participant, including 4 women
Meeting	23-24 .06.2018	Urtsadzor	Discussion on the planned activities of the project	12 participant, including 3 women
Meeting	27.05.2018	Haghartsin	Discussion on the planned activities of the project	8 participant, including 6 women
Meeting	27.05.2018	Haghartsin	Discussion on the planned activities of the project	12 participant, including 6 women
Meeting	22.06.2018	Aghavnavanq	Discussion on the planned activities of the project	10 participant, including 4 women
Meeting	23.06.2018	Khachardzan	Discussion on the planned activities of the project	8 participant, including 6 women
Meeting	06.07.2018	Aghavnavanq	Discussion on the planned activities of the project	5 participant, including 3 women
Meeting	06.07.2018	Dilijan	Discussion on the planned activities of the project	6 participant, including 5 women
Meeting	06.07.2018	Haghartsin	Discussion on the planned activities of the project	13 participant, including 13 women
Meeting	06.07.2018	Khachardzan	Discussion on the planned activities of the project	12 participant, including 12 women
Meeting	20.07.2018	Dilijan	Discussion on the planned activities of the project	12 participant, including 0 women
Meeting	06.07.2018	Margahovit	Discussion on the planned activities of the project	9 participant, including 1 women
Meeting	12.07.2018	Margahovit	Discussion on the planned activities of the project	5 participant, including 3 women
Meeting	18.07.2018	Margahovit	Discussion on the planned activities of the project	8 participant, including 4 women
Meeting	19.07.2018	Fioletovo	Discussion on the planned activities of the project	9 participant, including 0 women
Project campaign through personal conversations and phone calls	02.07-20.07.2018	All communities	Brief overview of the project, collection of feedback and identification of needs	68 participant, including 28 women
Presentation and discussion of the full package of the program for beneficiary communities	01.08.2018	Representatives of Communities, Ministry of Nature Protection, “Dilijan” National Park, “Khosrov Forest” State Reserve, Regional Administrations, NGOs, as well as the representatives of Dilijan newspaper, publishing in the region of Dilijan.	The EPIU employees and experts have presented the Project activities and targets according to the regions. There have been exciting discussions and suggestions, which were included in the project.	46 participant, including 10 women

Comments

1.254 participants were involved in the meetings, including:

- employees of the community administrations -30

- teachers – 22
- high school pupils -12
- employees of public and private organizations– 19
- housewives, farmers, cattle-breeders, pensioners, students, benefit recipients– 127
-NGOs, women, youth and members of environmental unions - 44

In total 129 women were engaged in the consulting processes, which makes up 50.78 % of the whole members.

2. Participants were presented with the project goals, objectives and their solutions.
3. Participants were involved in the discussions concerning activities designed in the project concept aimed at enhancing the adaptation of the natural and agroecosystems under climate change conditions.
4. Participants were involved in the discussions concerning activities designed in the project concept contributing to the receipt of additional income (construction of solar dryers for fruits and herbs, non-heated greenhouses, solar water heaters of general use).
5. Participants were involved in the discussions concerning opportunities designed in the project concept on the introduction of new relatively heat and dryness resistant, highly demanded vegetable crops.
6. Participants were involved in the discussions concerning opportunities designed in the project concept on establishment of fruit and berry orchards.
7. Participants were involved in the discussions concerning opportunities designed in the project concept on cultivation of typical herb species on a pilot area.
8. Names and social statuses of the participants were not taken into account during the individual interviews aiming to increase credibility. Only the attitudes towards the project and the list of activities they find appropriate to be implemented in their privatized land or natural ecosystems were considered.

Results

1. Participants are informed of the project and approve the proposed activities.
2. Participants highlighted the importance of the construction of greenhouses and drying facilities and irrigation water saving measures.

Although the participants find the construction of solar heaters important, due to increased dryness of climate since 2017 the required constant water supply is currently problematic. It is proposed to address this issue at the project implementation phase when the problem of permanent water supply is solved.

3. It is proposed to hand the solar dryers for fruits and herbs, as well as non-heated greenhouses to the communities. Besides, during the implementation phase of the project it is suggested to clarify the list of the stakeholders through the participatory approach.
4. It is recommended to take into consideration the fact that the solar dryers and non-heated greenhouses will be primarily provided to non-governmental organizations, women, youth, other unions, large families, schools and kindergartens that have adequate conditions for their construction.
5. Participants highlighted the importance of midfield road repair, improvement of pastures, meadows and arable land, as well as the application of new water saving technologies and establishment of feeding base.

6. It is recommended to pay a great deal of attention to raising awareness on the implemented activities.
7. Participants are interested in the idea of establishing agro-forest and improving natural herb habitats.
8. The participants are mostly ready to support the project at all stages of its implementation.

The lists of participants are provided in Annex 3

During the final Community meetings, were drawn up protocols, where were presented the principal works, which have been chosen throughout of discussions and must be implemented in communities (Annex 4)

Selection of stakeholders

68. Based on consultations with community leaders, socio-economic development programs of the Tavush and Ararat marzes, National Statistical Service data, the population structure of communities, as well as based on lessons learnt from the projects implemented by EPIU and other organizations initial stakeholder groups initial stakeholder groups were identified and identified. The final list of target groups will be determined by the results of the needs assessment.
    - *Community administration employees:* In conformity with the law of the Republic of Armenia on Local Self-government community administrations have rather extensive rights to carry out environmental, reconstruction, health protective, construction and other activities within their administrative boundaries. The program believes that raising the level of the knowledge of the municipal councils and staff members is a priority issue and will contribute to the effective implementation of the activities envisaged by the projects, outcome conservation and experience dissemination. At the same time decision-makers having the relevant knowledge will not make decisions in the future that would cause damage to the environment and in the result to community's interests.
    - *Farm households:* The impact zone of the project is mainly agricultural which is carried out relatively on small plots/1200-2500m2. There are very few large farms, which are able to organize awareness and knowledge raising events for their employees. The selected target group is the most polynomial and vulnerable as unsatisfactory social conditions restrict their opportunities to get sufficient knowledge on urgent environmental problems and effective measures to solve them.
    - *A great deal of attention has been paid to the involvement of social groups in the development of the full project proposal stage. We have met with social services in the regions, have identified lists of social beneficiaries living in the project area, large families, pensioners, and we had individual meetings with them, we identified the privatized lands, land plots and actions that would improve their social status.*
    - *NGOs, women, youth, environmentalist's voluntary unions:*
    - *Teachers and high school students:* This target group is highlighted by the fact that they are the direct bearer and transmitter of knowledge. Teachers endowed with sufficient environmental knowledge (focusing the objectives of the project) can form stable mindset among students on the importance of environmental events and biodiversity conservation,

while among high school students both to disseminate knowledge and to decide on getting professional education.

- *Media:* Great is the role of this target group on the dissemination of information on the project, coverage of events, outcome analyses, propagation of positive experience, transparency and mobilization of stakeholders. Special training program will provide mass media with the necessary knowledge and printed material for distribution ensuring continuity of the project.
- *The staff of protected natural areas:* The program emphasizes the importance of increasing awareness of this group and fruitful relationship with the surrounding communities. The training program will focus on solving conflicts between SPNA and community, their solution ways, participatory management and benefit distribution issues. This target group is directly connected with the surrounding communities and has all the possibilities to widely disseminate the results of the project and best practice. When drafting the preliminary draft project concept a number of meetings were held the employees of "Khosrov forest" State Reserve, "Dilijan" National Park and majors of adjacent communities and community council members.

69. There are a number of NGOs in the project area mainly in Urtsadzor community, Dilijan city and Margahovit community. During the meetings with some of these organizations, opportunities for their involvement in the process of developing and implementing the full project proposal were discussed. All non-governmental organizations have expressed their desire to support the implementation of the project and to ensure sustainability of project results after its completion. Several questionnaires have been developed to collect reliable data on communities that have been submitted to the communities during visits or electronically the results of which are summarized in the Annex 2. In all discussions the principle of gender equity was ensured.

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

70. The total funding required for this project is US$ 2, 506, 000 including project management and project execution fees. The funding requested is based on the available estimates of the cost of proposed technologies for climate smart agriculture, technology transfer and capacity building activities in four communities. Funding is being requested for the implementation of interventions to reduce the vulnerability and improve the resilience of the local populations of "Khosrov Forest" State Reserve and "Dilijan" National Park adjacent communities, by focusing on critical sectors (degraded natural ecosystems, infrastructures, agriculture, water resources, energy efficiency, additional incomes and etc) in order to reduce the negative impacts of climate change including:

    - Increasing the adaptation capacity to climate change in the agricultural sector (including agriculture and livestock),
    - Improving the capacity of communities, producers, institutions, and other relevant stakeholders regarding adaptation to climate change

Table 4 (see above) provides further details on the financial resources available that the local administrative and community level indicating the very limited availability of resources at this level calling for a full provision of resources

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

Sustainability

71. It is expected to impact the geographical areas selected and more than 18,000 inhabitants. The capacity building process of the project allows training local leaders who will be able to build capacity within the communities themselves.

- The project promotes initiatives that will continue to provide results beyond the year of implementation. As an example, the restoration and improvement of irrigation water systems, infrastructures, pastures and hay-meadows have long-term lifespan. However, those initiatives require regular maintenance after the implementation. The participation of local organizations, community administrations, NGOs and specially the commitment of local beneficiaries (individuals and organizations) make possible to preserve and even continuously improve the initiatives. In the agricultural sector, the sustainability of the proposal depends on the new knowledge provided by the adaptation initiatives, the use of innovative cost-effective technologies, and the monitoring of the effects of climate change and its variations. In these cases, the fulfillment of the objective may be observed in terms of productivity and the profits of the agricultural sector, by having successfully included adaptation actions. Efforts will be made to capture the long-term sustainability of the proposed sustainable land management and adaptation measures by supporting an adequate monitoring system.
- Sustainability will be further supported through mainstreaming and cross-sectoral, multi-stakeholder recognition of the role that increasing public awareness and knowledge to farmers, community leaders, relevant district and provincial officers on climate change and alternate adaptation measures in agriculture and water management can play in addressing many of the development challenges Armenia faces. In line with the many activities including awareness raising on climate change, there are more measures will be undertaken to change people's attitude and practices in sustainable adaptation to climate change. The project will furthermore strengthen the sustainability of the proposed interventions by supporting the land related policies and legislation and facilitating further investments in support of sustainable land management and climate smart agriculture.
- In order to sustain project activities beyond the project implementation date Community management plans will be developed which will clearly define the responsibilities of all actors engaged in the implementation of the project at community level. Upon completion of the project delivery-acceptance acts will be signed with EPIU and relevant community leaders to transfer the project outcomes and relevant agreements will be signed with the community leaders for the further maintenance and management of project outcomes. Moreover, the savings generated from energy, gas etc in public sector will be used for this purpose. Additionally, communities' budgets will include additions from public sector in the articles of the environmental protection and incomes from other activities.
- Agreements on the maintenance of the sustainability of project outcomes will be developed and signed with all stakeholders during the full project development phase.
- Agreements will be signed with stakeholder groups as well for the mutual use and maintenance of project outcomes. The laws of the Republic of Armenia, lessons learnt from similar projects, measures necessary for the community, awareness of the population about the importance of ecosystem adaptation to climate change, network of non-governmental organizations and their capacity building, independent media and relatively high level of education of the population are basis for ensuring sustainability of project outcomes.

- Lessons learnt from WB, UNDP, UNEP, UNIDO and many other projects have been observed. In all programs, the sustainability of the results is largely due to:
  - Ensuring participatory approach,
  - The implementation of activities that are accessible to large groups of population
  - Involvement of non-governmental organizations and capacity building;
  - Close cooperation with community leaders and community members,
  - Public awareness on progress and outcomes of the project,
  - Raising population's awareness on the objective, results and maintenance benefits,
  - The existence of a legally binding agreement with communities on the maintenance and sustainability of project results

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 project are in line with RA laws and normative acts and there is no need for additional assessment of conformity	No further assessment required for compliance
Access and Equity		Further assessment is required as the project may not be sufficiently accessible to all groups.
Marginalized and Vulnerable Groups	Project activities does not have negative impacts on vulnerable and marginalized groups	
Human Rights	Human rights in natural resources use, equity, education, health, and other relevant sectors are protected by constitution and other relevant laws. The project does not foresee any violation of human rights.	
Gender Equity and Women's Empowerment		Further assessment is required, to ensure equal participation of women in interventions and decision making too.
Core Labour Rights		Further assessment is required, to ensure that the labor rights are protected by Civil Code of the RA and equal

		participation of women
Indigenous Peoples	Main population of the area consisted of Armenians who are the indigenous people of the area. Therefore, there are no indigenous people in the project area.	
Involuntary Resettlement	Project interventions does not provide for resettlement of residents	
Protection of Natural Habitats		Further assessment is required to ensure that the interventions will cause no harm to natural habitats.
Conservation of Biological Diversity	Project activities will not have a negative impact on biodiversity conservation as within project design activities will ensure that the flora and fauna within the project area is conserved.	
Climate Change	The project does not have a negative impact on climate change. 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	Project is not expected to generate any environmental pollution and aims for higher resource efficiency for better management of available natural resources.	
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 Implementation of the program contributes to the preservation of natural and cultural heritage	The activities envisaged by the Project are not implemented in such sites where there are physical and cultural heritage	
Lands and Soil Conservation	Project interventions will not create any damage to land and soil resources.	

72. Following the initial screening process the proposed project concept is expected to be possibly in Category B in accordance with the Adaptation Fund's ESP as it has very limited adverse environmental or social impacts.

- There are not any cultural, traditional, religious or any other grounds in the Republic of Armenia and particularly in the project area that might result in differential allocation of benefits between men and women and naturally there is no need for further assessment.
- As a member of the Council of Europe, the Republic of Armenia has ratified all the conventions and treaties on gender equality and human rights.
- The number of other nationalities living in the project area is very few. Mainly ethnic Russians live in Fioletovo community and as project stakeholders they have been involved in the initial meetings and discussions on the Adaptation Fund, climate change adaptation and the program peculiarities held by EPIU. The objectives and activities of the project have been assessed positively by the community leaders and residents.

- It is envisaged by the project to renovate already existing field roads that are in a very poor condition. These activities will have limited negative impact on natural habitats, do not pollute the environment and do not harm the soil. It should be noted that, as a result of the activities, the greenhouse gas emissions from machinery and agricultural machinery will be reduced, and in case of improved roads, the cars will not bypass them and the natural habitat and landscapes of the area will not be harmed. The most damaged parts of the existing irrigation network will be repaired, in the result of which the land erosion, salinization and boggling processes the adjacent areas will diminish, it will enable to reduce water losses and to make the irrigation system effective in conditions of climate change under irrigation water reduction. Climate smart agriculture enables to increase adaptability by reducing irrigation water costs and it also increases women's employment time.
- Improvement of grassland and pastures with organic fertilizers will increase adaptability.
- Improvement of arable land with organic fertilizers and zeolite allows to accumulate moisture in arable lands and increase productivity and adaptability.
- . Solar water heaters will be placed on the roofs of the public sector buildings. Installation will have no impact on environmental pollution. Non-heated greenhouses and solar dryers will be constructed in areas that will not cause any harm to natural and agricultural landscapes.
- The project envisages application of new technologies and lightweight constructions, during which the soil will not be damaged and the environment will not be polluted. Activities will be identified during the preparation of the fully-developed project proposal to allow for adequate risk identification and impact mitigation and prevention, as well Environmental and Social Management Plan (ESMP) will be developed.

PART III: IMPLEMENTATION ARRANGEMENTS

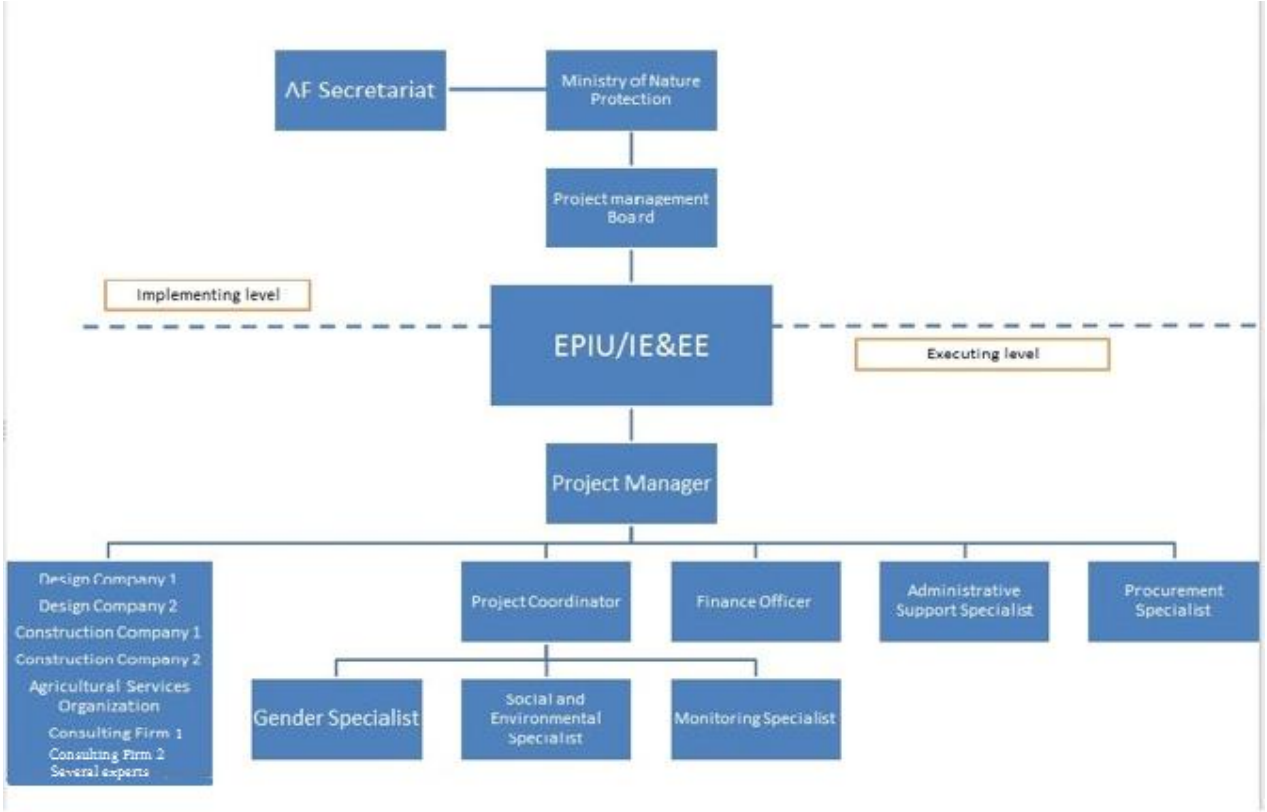
A. Describe the arrangements for project / programme implementation.

73. The project will be implemented over a three-year period, beginning in September 2018. The implementing entity (IE) for the project will be EPIU, as the National Implementing Entity for the Adaptation Fund. Replicating the longstanding work and experience of EPIU in working directly with national stakeholders (public and private organizations, academy, NGO's), and considering past success of EPIU implementing programs and projects at national and international level, the Government of the Republic of Armenia has explicitly endorsed this AF project to be executed by EPIU.
    - The Project Management Board (PMB) will be responsible for making management decisions for the AF project. In addition, the board will: i) undertake project assurance (monitoring and evaluation); ii) ensure performance improvement; and iii) ensure accountability and learning; iv) approve and closely monitor the multi-year and annual work plan to ensure its fulfillment and that it contributes to achieving project objectives; (vi) approve the annual report, multi-year and final report.
    - The PMB will comprise of designated representatives from relevant ministries and representatives from local self-government bodies and EPIU staff. The Project Management Board will choose a member from its composition to serve as secretary to the PMB. The

PMB will approve annual work plans and procurement plans, and review project periodical reports as well as any deviations from the approved plans.

- The overall management of the AF project will be executed by EPIU staff as NIE. The following implementation services will be provided by EPIU for the AF project:
  - overall coordination and management of EPIU's NIE functions and responsibilities, and the facilitation of interactions with the AFB and related stakeholders;
  - oversight of portfolio implementation and reporting on budget performance;
  - quality assurance and accountability for outputs and deliverables at the project development phase, during implementation and on completion;
  - receipt, management and disbursement of AF funds in accordance with the financial standards of the AF;
  - information and communication management to track and monitor progress (financial and substantive) of project implementation;
  - oversight and quality assurance of evaluation processes for project performance and ensuring that lessons learned/best practice are incorporated to improve future projects; and
  - monitoring project activities, including financial matters, and preparing monthly and quarterly progress reports, and organizing monthly and quarterly progress reviews;
  - supporting the PB in organizing PB meetings;
  - managing relationships with project stakeholders including donors, NGOs, government agencies, and others as required.

The following organigram shows the structure of project implementation arrangements:



74. The day to day project management will be conducted by EPIU in collaboration with Urtsadzor community (Khosrov Forest State Reserve) as well as Dilijan, Margahovit and Fioletovo communities (Dilijan National Park) and be supported by a project management unit hosted by EPIU. The project management unit will for example be responsible for the procurement of goods, support for the mobilization of technical expertise, where this is not yet available, monitoring compliance with social and environmental standards as well as project monitoring and evaluation. Where necessary the project management unit will recruit a number of technical experts to support the project coordination and implementation. These may include, but not be limited to (i) project coordinator or project manager, (2) procurement specialist, (iii) accountant, (iv) gender specialist, as well as (v) monitoring and evaluation specialist.
75. Grievance redress mechanism. To facilitate a mechanism, which would allow stakeholders from the target communities of Urtsadzor, Dilijan, Margahovit and Fioletovo to submit compaints and concerns on the project and its implementation, an independend grievenace redress mechanism would be established and managed by an institution outside of EPIU. The project would therefore follow international best practice for managing grievaneces and complaints.

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

Risk	Category	Level	Mitigation measures
Not all necessary stakeholders may take part in the process with the capacity and commitment required (from the inception phase to completion) or might feel left out in the process. Afterwards, there can be resistance from some stakeholders in adopting the proposed measures.	Institutional	Low	- The project will build upon an active stakeholder enagement strategy and frequent consultation in the four target communities of Urtsadzor, Dilijan, Margahovit and Fioletovo. - To ensure the equal participation of women, youth, elderly and other potentially vulnerable groups, dedicated consultations and working groups with these groups will be organized to provide ample space for the consideration of th specifc needs of these stakeholder groups. - A grievance redress mechanism would support community members and stakeholders to submit any complaint.
Project outcomes, including properties such as, greenhouses, dryers, solar heaters, etc. are not well protected	Institutional	Low	Project outcomes will be well protected by the corresponding communities with respective agreements.
Beneficiaries may feel left out at the implementation process	Institutional	Medium	- The project will be implemented in close consultation with different stakeholders and in collaboration

Risk	Category	Level	Mitigation measures
and or have insufficient collaboration between implementing body and stakeholders;			with the affected communities. The roles and responsibilities would be clarified during an inception workshop whereas ownership building will contribute to better collaboration between all stakeholders.
Delays in project implementation	Institutional	Low	-Project activities are well prepared to be completed in proposed timeframe. -Monitoring activities will ensure implementation targets are kept during the project implementation.
Implementation capacity constraints with limited human resources in national and regional authorities to ensure a timely implementation and the sustainability of the project.	Institutional	Medium	-Knowledge and awareness building is one of the key components of the project. - 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.
Government is not supportive throughout the implementation phase and for the sustainability of the project	Political	Low	-As EPIU is a state institution, government will be supportive from the beginning of the project. Local and National authorities will be notified of the importance of the project and all the relevant support will be given to the project management unit.
Project beneficiaries are not well chosen	Social	Low	Initial consultation activities will ensure that all stakeholders are identified and well consulted; moreover consultations will include women, youth and elderly people and other vulnerable groups. The project would support the establishment of an independent grievenace redress mechanism.
Project beneficiaries are resistant to change and/or the new technologies applied are difficult to manage	Social	Medium	-During the implementation phase consultations of different stakeholders will ensure the ownership building for the project. -Project will ensure active participation of stakeholders

Risk	Category	Level	Mitigation measures
			-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.
Mismanagement of resources	Financial	Low	-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.	Financial	Low	-EPIU will ensure that all the funds are properly managed; all procurement activities are completed in a timely manner. Dedicated procurement staff in the project management unit of EPIU will

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

Environmental and social principles	Assessment	Potential impacts and risks- further assessment and management required for compliance	
		Description of process for environmental and social and gender safeguards and mitigation measures	Responsible entity
Compliance with the Law	Very Low	It is very unlikelyn that the project will not be in compliance with relevant national laws. As a government entity EPIU is obliged to act under laws and regulations of the Republic of Armenia. Furthermore contractors and consultants recruited by EPIU for the implementation of the projet will again act under the laws and regulations of Armenia. Technical specialists of EPIU will ensure the compliance with technical regulartions, including for example gender specialists.	NIE, Technical and Gender specialists.
Access and Equity	Very Low	All the beneficiaries of the project will have fair and equitable access to project, as well as in decision making processes (Risk level-Low). Project Management Unit and the EPIU will ensure that the equity and benefits throughout the project is equally accessible to all stakeholders. Through M&E actions the assessment of equity should be carried out throughout all stages of the project. The project implementation will follow a bottom up, participatory approach which is driven by the needs and preferences of the involved communities. During all implementing processes beneficiary groups will be chosen in participative way. Events will be announced thoroughly. There will be neither discrimination nor favouritism in accessing program benefits.	Gender and M&E specialists.

		A grievence redressmechanism will be established as an independent mechanism to objectively handle any conerns or complaints from stakeholers.	
Marginalized and Vulnerable Groups	Low	Marginalized and vulnerable groups, in particular elderly, women and poor families, in the project area are included in the project design phase, and the projects direct benefits will apply to them. A dedicated consultation mechanism will be stablished, where women, youth and elderly will be provided with a safe forum to contribute to the project design and implementation. An independednt grievence redress mechanism would allow handing any kind of concerns of involved stakeholders.	NIE, Gender specialist, M&E specialist
Human Rights	Very Low	Human rights in natural resources use, equity, education, health, and other relevant sectors are protected by constitution and other relevant laws. The program activities will not engage in any activity that may result in the infringement on the right of any person during implementation.	NIE
Gender Equity and Women's Empowerment	Low	The management of women's involvement in the project should be carried out from the inception of the project. Firstly, there is going to be profiling of stakeholders to ensure that women are direct beneficiaries of the project. During the project implementation women will be encouraged to take positions in the project. There are women and youth groups who are included in the project. As a process of women's empowerment the women groups will be given solar dryers and greenhouses. During the M&E processes, women groups will be targeted to be monitored in order to assess the direct and indirect benefits of the project towards women. Program design focuses on women as direct beneficiaries. During activity selection, project team will ensure that the project effectively responds to the unique needs of women and girls and promotes gender equity. Gender equity will be promoted during the trainings and knowledge awareness raising activities by ensuring up to 40% participation levels for women and youth. Their roles and needs have been considered during project design Women as climate change adaptation participants/leaders will be monitored from outset	NIE, Gender Specialist.
Core Labor Rights	Very Low	Labor rights are protected by Armenian constitution and laws. All persons employed under this program will follow Armenian legislation and will have proper employment contracts. Contractors and consultants hired by the EPIU for construction works will also follow the procedures prescribed in the labor law of Armenia.	NIE, Monitoring specialist.

Indigenous Peoples	Very low	The Constitution of the Republic of Armenia do not use the term 'indigenous Peoples', it refers to the Armenia population as having various 'ethnic groups' and in conformity with Article 56. Right to Preserve National and Ethnic Identity: 1. Everyone shall have the right to preserve his or her national and ethnic identity. Persons belonging to national minorities shall have the right to preserve and develop their traditions, religion, language and culture. Exercise of the rights prescribed in this Article shall be regulated by law.	NIE, Gender specialist
Involuntary Resettlement	very low	Project implementation does not include any resettlement of residents. There are no risks associated to any kind of resettlement. Any project actions, which could impact the movement of people (for example fencing of pastures for a more sustainable pasture management) would be conducted in close consultation with all involved stakeholders in the communities to limit the impact on communities	NIE, Environemtal and social management specialist
Protection of Natural Habitats	Low	The project has the objective to improve and sustain natural resources management and agricultural practices in areas adjacent to two national parks and protected areas. As such the expected impact of the project on Khosrov State Forest and Dilian National Park are expected to be positive. The project will fr example improve pasture management in the areas adjacent to the protected areas and will thus limit the risk of communities to impact the procted areas through for example uncontrolled grazing. Within the project areas there are no specific protected areas or habitats (e.g. endangered species), which would require specific actions.	NIE, Environemtal and social management specialist
Conservation of Biological Diversity	Low	Project activities would not have a negative impact on biodiversity conservation as within project design activities will ensure that the flora and fauna within the project area is conserved. Any project actions, such as the the introduction of new, more drought resilient hay and meadow management practices or seedlings would not include any alien species or any actions, which would have any negative impact on the bio-diversity of the project area.	NIE, Environemtal and social management specialist, additional support from IUCN
Climate Change	N.A.	The project does not have a negative impact on climate change. No project interventions are expected to contribute to release of gases responsible for CC and thus are not expected to contribute to GHG emissions. In addition the project would not create new climate risks, for example construction in areas affected by flooding; Instead the main objective of the project is to support the adaption of communities living in areas adjacent to protected areas to the potential impacts of cliate change.	NIE, Environemtal and social management specialist,
Pollution Prevention and Resource Efficiency	Low	The project will support the sustainable management of land and water resources to avoid, limit and reverse land degradation in the project area and support communities to	NIE, Environemtal and social

		adapt to the potential impacts of climate change. Of the proposed climate smart agricultural measures no pesticides or mineral fertilizer would be provided, which could have any potential impacts on the project area. During construction (for example rehabilitation of field tracks, construction of culverts), the necessary precautons would be made to avoid or limit any impact (for example compaction of soil, localized gully erosion at construction sites).	management specialist,
Public Health	N.A	The project would have very likely no negative public health impacts; As indicated above the project will not use any pestices or any other material with potential public health impacts, such as sulfides use in solar dryers.	N.A.
Physical and Cultural Heritage	N.A.	There are no any impacts on physical or cultural heritage. Map below outlines cultural heritage sites and the project location showing there are no any impacts on these sites. It is very unlikely that new sites of specifc cultural heritage would be discovered by the project.	N.A.
Land and Soil Conservation	very low	The project has the objective to avoid, limit and reverse any negateive impacts on land water and soil resources in the project areas. In fact the project is expected to have a positive impact on soil conservation and will reverse land degradation through agrocforesty and localized terracing of land.	NIE, Environemtal and social management specialist,with support from UNCCD.

THE GRIEVANCE RESOLUTION MECHANISM (GRM)

The Grievance Resolution Mechanism (GRM) will implement the policy and guidelines of EPIU GM. As set out in policy, the GRM will support the enhancement of environment and social well-being, including human rights and gender equality. The GRM will receive and facilitate the resolution of concerns, complaints, and grievances about the programme's environmental, social, human rights, gender performance as well as other general complaints relating to the programme. When and where the need arises, this mechanism will be used for addressing any complaints that may arise during the implementation of the programme.

Concerns, complaints and grievances by affected persons will be directed to the Project Management Unit (PMU) where the Project Coordinator, Environmental and Social Safeguard (ESS) and Gender Specialists will be the focal points to receive, record, review, and address concerns in coordination with relevant stakeholders depending on the nature of the complaint. A complaints register will be maintained to record the date, details, and nature of each complaint, the name of the complainant, and the date and actions taken as a result of the follow-up investigation.

The register will also cross-reference any non-compliance report and/or corrective action report or other relevant documentation relating to the complaint.

Stage	Process	Duration
1	Any affected person or community head, representatives and other concerned party takes grievance to PMU.	Anytime
2	Project Coordinator, ESS or Gender Specialist reviews and finds solution to the problem in consultation with community heads and Artik municipality.	1weeks
3	Project Coordinator, ESS or Gender Specialist reports back an outcome to affected person who submitted the grievance.	1 week
If unresolved or not satisfied with the outcome at PMU level or has received no report in the allotted time period		
4	Affected person takes grievance through Artik municipality or to MoNP or NIE.	Within 2 weeks of receipt of decision in step 3
5	NIE reviews and finds a solution which may include recommendation of dispute resolution, including an appropriate body to oversee.	2 weeks
6	NIE reports back to the affected person who made the complaint.	1 week
If unresolved or at any stage if concerned party is not satisfied		
Affected party can take the matter to Office of the Ombudsperson or appropriate court or law enforcement bodies		As per Office of the Ombudsperson or judicial system or **law enforcement bodies**

Environmental and social management plan

76. The project has been identified as a "category b" project with limited environmental and social impacts resulting from the project. With regard to land and soil conservation as well as climate change impacts as wel as protected areas the project would likely have positive impacts on the communities and project area. As a management instrument for addressing any social and environmental issues, an environmental and social management plan (ESMP) would be formulated in accordance with the laws and regulations of the Republic of Armenia and the polcies of the Adaptation Fund. The ESMP outlines the preventive / mitigation measures proposed to reduce potentially adverse environmental and social impacts to acceptable levels. The plan also shows how these potential risks and mitigation measures will be further monitored, including responsibilities. The ESMP would be include consultations with the potentially affected stakeholders and disclosure of the documentation before any works and activity related to the project would commence.

1. Risks management arrangements

(i) Responsibilities: direct management responsibility of the ESMP will be under the EPIU project manager. The project manager will have oversight / final compliance responsibility. Changes or additional activities that arise during project implementation and add value/complement proposed sub-projects and fall within allowable limits set by Adaptation

fund will need to be cleared by the project manager and approved by the project management board depending on the scale and type of activity.

(ii) Management and mitigation measures: All project activities have been screened against the 15 environmental and social risks areas during project preparation phase. Outcomes will be presented during the project inception to all stakeholders to confirm the management and monitoring arrangements.

2. General environmental and social risks management reduction measures

In addition to the risk management measures identified above, the following elements will be put in place to ensure the compliance with the ESP:

(i) All MoUs and Agreements of Cooperation with Executing Entities will include detailed reference to the ESMP and GP, the 15 ESP Principles and especially compliance to law (principle 1), human rights compliance (principle 4), gender approach (principle 5) and labour and safety standards (principle 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) EPIU staff will check project compliance to the AF ESP during the project (besides the project manager) (principle 4).

(iii) Continues coordination with technical supervisors responsible for compliance to national and local standards will take place.

(iv) Capacity building and awareness raising: the management teams, executing entity partners and target communities, will receive training / capacity development to understand and manage the 15 Principles, the ESMP and in particular their responsibilities. This will be done during inception.

3. Risks monitoring arrangements:

(v) Monitoring will be done to ensure that actions are taken in a timely manner and to determine if actions are appropriately mitigating the risk / impact or if they need to be modified in order to achieve the intended outcome.

(vi) Annual reporting will include information about the status of implementation of this ESMP, including those measures required to avoid, minimize, or mitigate environmental and social risks. The reports shall also include, if necessary, a description of any corrective actions that are deemed necessary.

Direct monitoring responsibilities will be under the project manager and monitoring specialists. The overall project manager will have oversight / final compliance responsibility. When changes or additional activities are required, monitoring indicators will be changed or added as well.

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

The project will be monitored through the M&E activities, M&E budget is provided below. The monitoring will be carried out by the Project Team verified by the NIE. Monitoring and evaluation progress will be based on targets and indicators set in Projects Results framework.

Project Management Unit will create system for project monitoring progress. Relevant data collection and recording process with participatory mechanisms will support the monitoring and evaluation of outcome and output indicators.

Project Launch workshop tasks will include:

1. Presentation and introduction of the project's results framework to all project stakeholders
2. Presentation of project team
3. Ownership building and planning of work plan, based on projects results framework. This will include of establishing roles, responsibilities, functions of NIE and Project Management team.
4. Review of M&E indicators
5. M&E budget and work plan will be agreed and scheduled.

Throughout the project, PMU and the division of monitoring and evaluation will be responsible for monitoring and their actions will be guided by Annual Operating Plan (AOP). Annual Operation Plan will display all necessary activities for current year and Quarterly Status Reports will present monitoring process on executed activities. AOP's will be agreed and scheduled annually during NIE meetings, and AOP will be guided by project results framework.

Following reports and evaluations will be developed throughout the project:
Inception Workshop Report- will be prepared after inception workshop, which will detail about roles, responsibilities, actions, and functions of all stakeholders. Furthermore, it will include first AOP and monitoring plan for the first year.
Annual Operating Plan (AOP)- Annual plan should be approved by the NIE before starting each operating period, and it will detail all activities to be executed, all milestones and goals which will be reached during the year, and dates for each indicator to be executed. AOP will include all the necessary financial activities relevant to the first period.
Quarterly Status Reports (QSR)- project management unit should submit QSRs to the NIE at the end of each operating quarter. QSRs will present how the indicators identified in project results framework are executed, what challenges PMU faces during the execution process and identify any constraints. Quarterly Status Reports will present monitoring process on executed activities.
Annual Management Reports (AMR)- Annual Management Report will cover last AOP, it will compare the actual results with the targets and milestones listed in AOP, and if necessary it will come up with improvements and corrective measures for the upcoming AOP.
External Audit Reports- with the periodic financial statements, external annual audit report will be prepared. Audit reports are made in accordance to Financial Regulations set by the government.
Mid-term Evaluation- Halfway through the project implementation the project will undergo an external mid-term evaluation, which will assess the project's progress of achieving outcomes. Effectiveness and efficiency of the projects will be taken into consideration, and if needed any corrective mechanisms will be applied after the mid-term evaluation.

Final Report- Final report will be presented three months prior to the end of the project. The main focus of the evaluation is to assess project's results with planned results. Moreover, the final evaluation will look to impacts of the projects and to the sustainability of the project.

Final External Evaluation- The main focus of the evaluation is the project impacts, project's sustainability and long-term effects. Final evaluation will also suggest any further actions to be implemented for project's sustainability.

Monitoring and Evaluation					
Quarterly and annual report	**EPIU staff**				
Final report	**EPIU staff**				
Project Management Board meetings	**Project Manager**	**700**	**700**	**700**	**2100**
Technical supervision	**Expert**		**9423**	**9427**	**18850**
Copyright Supervision	**Expert**		**2190**	**2190**	**4380**
Inception and final workshops	**EPIU staff**	**2000**		**2000**	**4000**
Midterm evaluation	**International expert**		**20000**		**20000**
Final Evaluation	**International expert**			**20000**	**20000**
External audit		**3000**	**3000**	**3000**	**9000**
Total		**5700**	**35313**	**37317**	**78330**

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

Result	Indicator	Baseline	Milestone (target, year 1)	End of project target	Means of verification	Responsibility	Risks and considerations
Objectives : Reduce the climate risk vulnerability of local communities living adjacent to the "Khosrov Forest" and "Dilijan" National Parks by streng-thening the adaptive capacity of the agricultural sector and reinforcing their insti-tutional and plan-ning capacity for climate change adaptation by implementing adaptation measures in selected communities.	• Total number of project beneficiaries • Percentage of women beneficiaries • LDN monitoring system established	0 beneficiaries LDN monitoring system established (no)	5000 30% no	16000 40% yes	6 monthly project reports, surveys	EPIU with support from UNCCD	
Component 1: Community based, climate smart agricultural practices in degraded areas and buffer zone							
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;	• Total area of land rehabilitated and with increased adaptation capacity • Water loss in irrigation systems reduced • % of livestock benefitting adapted pasture management	xx ha of land degraded in target communities Water losses in irrigation system (70%) 10% of livestock benefitting adapted pasture management	xx ha of land (xx%) rehabilitated Water losses in irrigation system (50%) 30% of livestock	xx ha of land (xx%) rehabilitated Water losses in irrigation system (30%) 50% of livestock	6 monthly project reports, surveys	EPIU and target communities	
Output 1.1: Irrigation water supply systems are rehabilitated increasing water use efficiency;	# m of irrigation system rehabilitated # solar water pumps installed	Tbd	6100m rehabilitated 1 pumps installed	120m rehabilitated 3 pumps installed	6 monthly project reports, surveys	EPIU and target communities	
Output 1.2: Water efficient drip irrigation systems are installed in selected community orchards;	# ha orchards equipped with drip irrigation	Tbd	1ha drip irrigation installed	5.2ha drip irrigation installed	6 monthly project reports, surveys	EPIU and target communities	The number of irrigation water has decreased, canals are subject to repair,

Result	Indicator	Baseline	Milestone (target, year 1)	End of project target	Means of verification	Responsibility	Risks and considerations
Output 1.3: Existing field tracks to remote pastures degraded lands are rehabilitated;	% Percentage of field tracks degraded / rehabilitated # km field tracks rehabilitated # culverts installed			30% of field tracks rehabilitated 39.5km rehabilitated 50 culverts installedn	6 monthly project reports, surveys	EPIU and target communities	
1.4: Sowing areas of perennial plants are created reducing rangeland degradation;	# ha of perennial sowing areas of perennial plants are created	# ha of perennial sowing areas of perennial plants are created	0ha of perennial sowing area established	10ha of perennial sowing area established	6 monthly project reports, surveys	EPIU and target communities	Due to intensive grazing the vege-tation cover and the number of edible herbs have dropped
Output 1.5: Community pastures and hay meadows are rehabilitated and improved their adaptive capacity;	# ha hay meadows and arable lands rehabilitated # ha pastures rehabilitated	# ha hay meadows and arable lands rehabilitated # ha pastures rehabilitated	100 ha hay meadows and arable lands rehabilitated	1382 ha hay meadows and arable lands rehabilitated	6 monthly project reports, surveys	EPIU and target communities	The production of fodder in hay meadows decreased,
Output 1.6 Livestock watering points are constructed;	# No of watering points constructed	No of watering points constructed	5 watering points constructed	15 watering points constructed	60% of field tracks degraded 39.5 km of field tracks rehabilitated 50culverts installed	10% of field tracks rehabilitated Xx km rehabilitated # culverts installed	Due to insufficient amount of watering points, the livestock passes through large distances, resulting in degradation of pastures
Output 1.7: Degraded slopes are rehabilitated by belt planting of perennial, drought resistant plants	# ha degraded slopes rehabilitated by the creation of agroforest	Xx ha of agroforestry planted	1ha of agroforestry planted	3 ha of agroforestry planted	Project technical reports, mid-term and final studies.	EPIU and target communities	Due to intensive grazing and climate warming many slopes have degraded, vegetation cover has decreased

Result	Indicator	Baseline	Milestone (target, year 1)	End of project target	Means of verification	Responsibility	Risks and considerations
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;	• Total number of beneficiaries benefitting from climate smart technologies • Percentage of women beneficiaries benefitting from climate smart technologies	• Tbd • 10% of beneficiaries of climate smart technology are women	50beneficiaries 30% of beneficiaries of climate smart technology are women	350beneficiaries 50% of beneficiaries of climate smart technology are women	6 monthly project reports, surveys	EPIU and target communities	
2.1 Smart agricultural practices	X ha anti-hail nets Constructed X ha sowing of herbs, X ha Planting shrubs and mulching		0.5 ha sowing of herbs, 1ha Planting shrubs and mulching	2.5 ha ha anti-hail nets Constructed 1.5 ha sowing of herbs, 3.6 ha planting shrubs and mulching			

Result	Indicator	Baseline	Milestone (target, year 1)	End of project target	Means of verification	Responsibility	Risks and considerations
Output 2.2: Non-heated, lightweight greenhouses are constructed in priority community areas	m2 of green houses constructed # no of beneficiaries with access to green houses % of beneficiaies with access to green houses, which are women	m2 of green houses constructed # no of beneficiaries with access to green houses 10 % of beneficiaies with access to green houses, which are women	1000m2 of green houses constructed 30 beneficiaries 40 % of beneficiaies are women	2000m2 of green houses constructed 100 beneficiaries 70 % of beneficiaies are women	6 monthly project reports, surveys	EPIU and target communities	Greenhouses enable residents to get seedlings of plants in early spring which are more adapted to climate change. They will also allow getting additional revenues.
Output 2.3: Solar dryers are installed in priority community areas	m2 of solar dryers constructed # no of beneficiaries with access to solar dryers % of beneficiaies with access to solar dryers, which are women	m2 of solar dryers constructed # no of beneficiaries with solar dryers 10 % of beneficiaies with access to solar dryers, which are women	100 m2 of solar dryers constructed beneficiaries 40 % of beneficiaies are women	300 m2 of green houses constructed 100 beneficiaries 80 % of beneficiaies are women	6 monthly project reports, surveys	EPIU and target communities	Residents dry fruits, berries and herbs in their houses resulting in increase of loses and production quality
Output 2.4: Community management and business plans are formulated for climate smart agricultural value chains	# Community management and business plans are formulated for climate smart agricultural value chains	No business plans formulated	2 business plans formulated	2 business plans formulated	Business plans are available	EPIU and target communities	There are no community management and business plans for climate smart agricultural value chains
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;	No of beneficiaries benefitting from awareness raising and capacity building for climate smart agriculture and LDN % of beneficiaires benefitting from awareness raising and	Xx beneficiaries 10% of beneficiaies are women	200 beneficiaries 30% beneficiaries are women	800 beneficiaries 350% beneficiaries are women	Training reports	EPIU and target communities	

Result	Indicator	Baseline	Milestone (target, year 1)	End of project target	Means of verification	Responsibility	Risks and considerations
	capacity building for climate smart agriculture and LDN, which are women						
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;	# number of beneficiaries aware of climate change impacts and appropriate responses to threats % of beneficiaires aware of climate change impacts and appropriate responses to threats, which are women	0 beneficiaries 10% women beneficiaries	100 beneficiaries 30% women beneficiaries	200 beneficiaries 40% women beneficiaries	Training reports	EPIU and target communities	Though community residents have some knowledge on best practices of climate smart agriculture and LDN, it is insufficient. In some communities women and young people have established groups through which they wish to adapt agricultural activities to modern requirements.
Output 3.2 Best practices examples and training material on climate smart agriculture are formulated, disseminated and made accessible;		# training programs and thematic topics Awareness raised at community level of climate change threats					
Output 3.3 Community based adaptation planning is conducted for target communities;	No of community based adaptation plans formulated	Not forumulated	4 community based adaptation plans formulated		Community based adaptation plans	EPIU and target communities	
Output 3.4 Strategies for sustaining climate smart agriculture and LDN in target areas have been formulated.	Strategy for sustaining climate smart agriculture and LDN in target areas have been formulated.	Not available	1 community based adaptation plans formulated	3 community based adaptation plans formulated	Community based adaptation plans	EPIU and target communities	

Result	Indicator	Baseline	Milestone (target, year 1)	End of project target	Means of verification	Responsibility	Risks and considerations
Output 3.5: A monitoring system for land based adaptation measures and land degradation neutrality has been established for the target communities;	# number of stakeholders are aware of and use Community based adaptation planning of which # women # voluntary associations use smart agriculture practices and LDN # residents which are included in the frames of the activities of smart agriculture and LDN of which # women # stakeholders(women, men, youth) are guided by the created monitoring system or plan	No stakeholders available Xx				EPIU and target communities, with support of IUCN and UNCCD	Food security training plan integrated within the adaptation training programs, with gender considerations.

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

Project Objective(s)[12]	Project Objective Indicator(s)	Fund Outcome	Fund Outcome Indicator	Grant Amount (USD)
1. 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.	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)**
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	
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 change impacts, including variability	6.1.1.No. and type of adaptation assets (physical as well as knowledge) created in support of individualor community-livelihood strategies	

[12] The AF utilized OECD/DAC terminology for its results framework. Project proponents may use different terminology but the overall principle should still apply

			6.1.2. Type of income sources for households generated under climate change scenario	
3. Awareness, planning, monitoring and decision making capacity on climate smart agriculture production methods and land degradation neutrality has increased in target communities	The number of community workers, households, NGO representatives, Mass media representatives, school teachers 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	

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

Outcome/Output			Notes	Y-1	Y-2	Y-3	TOTAL	
Component 1		Sub-Total Component 1		507,041	1,170,627	55,515	1,733,183	
1	1.1	Construction Company 1	Irrigation system construction	150 000	482566	-	632.566	N1
			Installation of 38 kilowatt-hour solar pumps	2323 041	30 000	-	53.041	
			Establishment of parks without drip irrigation system	35 000	100 000	-	135.000	
			Establishment of parks with drip irrigation system	10 000	42 600	-	52.600	
	1.2	Construction Company 1	Construction of drip irrigation system	10 000	64 833	-	74.833	N1
	1.1-1.2	Design Company 1	Preparation of Design-Estimated Documents	50 000	-	-	50.000	N2
	1.3	Construction Company 2	Reconstruction of existing field tracks and Installation of water culverts	100 000	209 315	-	309.315	N3
		Design Company 2	Preparation of Design-Estimated Documents	31 000	-	-	31.000	N4
	1.4	Implementing Company	Rehabilitation of arable lands and	8 000	14 000	9205	31.205	N5
	1.5		Rehabilitation of community pastures and hay meadows	60 000	180 000	40310	280.310	
	1.6	Construction	Construction of livestock	20 000	31 313	-	51.313	N1

		Company 1	watering points					
	1.7	Implementing Company	Increasing adaptation of degraded slopes	10 000	16 000	6000	32.000	N5
Component 2		Sub-Total Component 2		114 000	192397	36 000	342397	
	2.1	Implementing Company	Smart agricultural practices, 2 ha sowing of herbs, Creation of testing areas on the fields	5 000	10 617	-	15.617	N5
	2.2	Implementing Company	Demonstration of land improvement with organic fertilizers on household lands	2000	3000	2200	7200	N5
	2.2	Construction Company 2	Construction of solar greenhouses with drip irrigation	20 000	50 000	20 000	90.000	N3
	2.3	Construction Company 2	Construction of solar dryers for fruits and vegetables and herbs	15 000	60 000	10 800	85.800	
		Implementing Entity	Construction of anti-hail nets	-	41 667		41.667	N5
			The introduction of heat-resistant, dry resistant new varieties and crops	2000	6 000	3000	11.000	
			Planting shrubs and mulching	5 000	21 113	-	26.113	
	2.4	Consulting Company 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	N6

Component 3		Sub-Total Component 3		61000	60500	78500	200000	
	3.1	Consulting Company 2	Workshops	5 000	-	-	5000	N7
			Development of questionnaires and conducting surveys	4 000	-	-	4 000	N7
			Development of field schools training programs	8 000	-	-	8 000	
			Organization of field school groups, knowledge enhancement, demonstration field experiments	5000	15000	15000	35000	
	3.2	Consulting Company 2	Explore communities' needs and capacities;	12 000	-	-	12 000	N7
			Develop a training and awareness-raising program,	12000	-	-	12 000	
			Develop topics for the project	4000	-	-	4000	
			Implement knowledge and skills training program	2000	15 000	15 000	32 000	
	3.3	Consulting Company 2	Develop a plan for dissemination of project materials, results, best practices,	-	2500	2500	5 000	N7
			Disseminate project materials, results, best practices,	1500	3000	15000	19 500	

	3.4	Consulting Company 2	Develop strategies for sustaining climate smart agriculture and LDN in target areas.	-	3000	8000	11 000	N7
			Determine the existing non-governmental organizations, women, youth, environmental and other unions in the communities and develop capacity building plan for them.	2000	12 000	12 000	26 000	
	3.5	Consulting Company 2	Establishment and implementation of Monitoring System for land based adaptation measures and land degradation neutrality	5500	10000	11000	26500	N7
Total: Project Components				682,041	1.423.524	170.015	2,275,580	
IE Fee / Oversight Costs (*max 8.5% of total budget)				43.650	73.263	76407	193,320	
Total Project Cost				725.691	1.496.787	246.422	2,468,900	
Project Execution costs (EPIU)1.5% of total budget				12.260	12.460	12.380	37,100	
Total Project/Programme Cost				737.951	1.509.247	258.802	2.506.000	

Budget Notes:

N 1	Construction company 1 to carry out activities 1.1,1.2,1.6
N 2	Design company 1 to carry out the preparation of design documents for the activities 1.1,1.2
N 3	Construction company 2 to carry out activities 1.3,2.2,2.3,
N 4	Design company 2 to carry out the preparation of design documents for the activity 1.3
N 5	Implementing entity to carry out activities 1.4,1.5,1.7,2.1,2.2,2.3
N 6	Consulting company 1 to carry out activity 2.4
N 7	Consulting company 2 to carry out the activities envisaged in component 3

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

		Y-1	Y-2	Y-3	TOTA L
Project Manager		8660	8660	8680	26000
Coordinator		8000	8000	8000	24000
Monitoring Specialist		7300	7300	7400	22000
Social and Gender risk assessment specialist		5830	5830	5840	17500
Environmental risk specialist		5830	5830	5840	17500
Monitoring and Evaluation 67685					
Quarterly and annual report	EPIU staff				
Final report	EPIU staff				
Project Management Committee meetings	Project Manager	700	700	700	2100
Technical supervision	Expert		9423	9427	18850
Copyright supervision	Expert		2190	2190	4380
Inception and final workshops	EPIU staff	2000		2000	4000
Midterm evaluation	International expert		20 000		20 000
Final Evaluation	International			20 000	20 000

	expert				
External audit		3000	3000	3000	9000
Translation		1500	1500	2500	5500
Other expenses		830	830	830	2490
Total cost		43650	73263	76407	193320

Project Execution costs (EPIU)1.5% of total budget

		Y-1	Y-2	Y-3	TOTA L
Finance Officer		4390	4390	4396	13176
Administrative support,		3300	3300	3312	9912
Procurement specialist		2170	2170	2172	6512
Field trips		1200	1400	1400	4000
Misc		1200	1200	1100	3500
Total		12260	12460	12380	37100

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

	Upon Agreement signature	One Year after Project Start	Year 2	Total
Scheduled Date	January 2019	January 2020	May 2022	
Project Funds	682,041	1.423.524	170.015	2275580
Project Execution	43.650	73.263	76407	193320
Total Project Cost	725.691	1.496.787	246.422	2468900
Management Fees	12.260	12.460	12.380	37100
Total Project/ Programme Cost	737.951	1.509.247	258.802	2.506.000

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

A. Record of endorsement on behalf of the government[13] *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:*

Mr. Erik Grigoryan, Minister of Nature Protection of the Republic of Armenia	Date: *August-06-2018*

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

I certify that this proposal has been prepared in accordance with guidelines provided by the Adaptation Fund Board, and prevailing National Development and Adaptation Plans ("Intended Nationally Determined Contributions of the Republic of Armenia under UN Framework Convention on Climate Change", "Second National Environmental Action Programme of the Republic of Armenia, "Biodiversity Strategy and Action Plan of Armenia", "National Strategy and Action Plan of the Development of Specially Protected Nature Areas of Armenia (SPNAs)", "National Action Programme to Combat Desertification in Armenia", "the Land Degradation Neutrality National Strategy", "Community Agroresources Management and Competitive Project (2010-2020)") and subject to the approval by the Adaptation Fund Board, commit to implementing the project/programme in compliance with the Environmental and Social Policy of the Adaptation Fund and on the understanding that the Implementing Entity will be fully (legally and financially) responsible for the implementation of this project/programme.
Name & Signature Mr. Meruzhan Galstyan Implementing Entity Coordinator
Tel. and email: : +37410 651631; info@cep.am
Project Contact Person: Samvel Baloyan, Edik Voskanyan, Rubik Shahazizyan
Tel. And Email: sbaloyan09@rambler.ru, edshw@yahoo.com ; rshahazizyan@yahoo.com

Annex 1-2

Annex 1

Project on "Increasing the Adaptation Potential of Lands in Communities Adjacent to Specially Protected Areas of Nature of Armenia"

Questionnaire

Assessment of Population Needs for Adaptation of Natural and Agricultural Landscapes under Climate Change conditions

Community
Date of filling in the questionnaire << _____>> _____
Social status:
Employed ☐ Farmer ☐ Pensioner ☐ Beneficiary ☐ Student ☐

Gender Male ☐ Female ☐

Age ☐
Education (higher, secondary special, secondary) other _____

Please, answer the following questions:
1. Do you find that climate change is evident in your region?
Yes ☐ no ☐

2. If yes, how is it expressed (please specify)?
early spring frosts, summer high temperatures, torrential downpours, decrease in precipitation, reduction of river discharge, Increasing drought period, Increasing frequency of hot winds and etc._____

3. How is climate change affecting pastures and hayfields, arable land, orchards and vineyards, vegetable crops and grain yield?
Positive ☐ negative ☐ difficult to answer ☐

4. Do you find that at present there are measures to increase the adaptation of pastures and hayfields, agricultural land to climate change?
Do you know that there is a Specially protected area of nature /SPAN/ near your community?
yes ☐ no ☐ difficult to answer ☐

5. If yes, please list the known measures
_____
_____

6. How will you react, if a grant project on adaptation to climate change of pastures and hayfields and agricultural lands is carried out in your community?

Positive ☐ negative ☐ difficult to answer ☐

7. If positive, what activities would you prefer? / please specify /– Improvement of degraded pastures and hayfields, increase in fertility of arable land, new technologies for saving irrigation water, creating a stable feedstuff base, midfield road repairs, solar water heaters
Other_____

8. How do you feel about the idea of constructing solar dryers, small unheated greenhouses and solar water heaters for general use in your community within the project?

Positive ☐ negative ☐ difficult to answer ☐

9. If positive, how do you imagine the mechanism of their effective use?
Establishing stakeholder groups, ☐signing an agreement with the community administration, and provision of ☐chools, difficult to ans☐er ☐
Other suggestions_____

10. Do you know that there is a Specially protected area of nature /SPAN/ near your community?
yes ☐ no ☐

11. Do you use the natural resources within the area of the SPAN?
yes ☐ no ☐

12. If yes, please highlight the usage type (Grazing, haymaking, collection of edible plants and fungi, firewood harvesting and etc)

13. What is your knowledge of the causes of global climate change and the anticipated consequences in the Republic of Armenia?
Good- ☐ Satisfactory ☐ difficult to answer ☐

14. What is your knowledge on the adaptation measures of natural landscapes (pastures, hayfields and forest areas) under global climate change conditions?
Good ☐ Satisfactory ☐ difficult to answer ☐

15. What is your knowledge on the adaptation measures of agricultural landscapes (arable land, orchards and vineyards) under global climate change conditions?

Good ☐ Satisfactory☐ difficult to answer ☐

16. your community previously organize informational training on adaptation of pastures, hayfields and agricultural lands under climate change?

Yes ☐ no ☐ difficult to answer ☐

17. How do you think the increase in the level of knowledge and awareness of the population will contribute to the improvement of the activities aimed at the adaptation of pastures and hayfields under the conditions of climate change?

To a great extent ☐ to some extent ☐ difficult to answer ☐

If you believe that raising the level of knowledge will help improving the adaptation of natural and agricultural landscapes, please answer which training topics would you choose?

1. The causes of global climate change and projected impacts in Armenia.
   yes ☐ no ☐
2. Increase of adaptation to natural and agricultural landscapes (pastures, hayfields, forest areas, orchards, etc.) under the conditions of global climate change
   yes ☐ no ☐
3. International experience in climate-wise "clever" methods of farming under climate change conditions and investment opportunities in Armenia
   yes ☐ no ☐
4. Efficient livestock management techniques
   yes ☐ no ☐
5. Tourism and ecotourism
   yes ☐ no ☐

6. Other topics –please specify

_____
_____

7. How do you see the chances of your involvement in the project's knowledge and awareness raising component?
Positive ☐ difficult to answer ☐

If positive, how do you imagine your participation in the project?

1. Involvement in the teaching staff ☐
2. Involvement as a participant ☐
3. Other preferred status _____

Thank you

Annex 2

Project on “Increasing the Adaptation Potential of Land in Communities Adjacent to Specially Protected Areas of Nature of Armenia”

Questionnaire

Assessment of High school pupils’ Needs for Adaptation of Natural and Agricultural Landscapes under Climate Change conditions

Community
Date of filling in the questionnaire << _____>> _____

Gender Male ☐ Female ☐

Age ☐☐

Please, answer the following questions:

1. Do you know that there is a specially protected area of nature /SPAN/ near your community?
Yes ☐ ☐ no

2. "What are the values you know in the territory of the protected areas? Please underline (plants, animals, hydrographic, cultural, etc.) _____

3. Do you use the natural resources within the area of the SPAN?
yes ☐ ☐ no

4. If yes, please highlight the type of usage (Grazing, haymaking, gathering of edible plants and fungi, firewood harvesting, other_____)

5. What is your knowledge on the causes of global climate change and the projected consequences in the Republic of Armenia?
Good- ☐ Satisfactory ☐ difficult to answer ☐

6. What is your knowledge on the adaptation measures of natural landscapes (pastures, hayfields and forest areas) under global climate change conditions?
Good ☐ Satisfactory ☐ difficult to answer ☐

7. What is your knowledge on the adaptation measures of agricultural landscapes (arable land, orchards and vineyards) under global climate change conditions?
Good ☐ Satisfactory ☐ difficult to answer ☐

8. How do you think the increase in the level of knowledge and awareness of the population will contribute to the improvement of the activities aimed at the adaptation of pastures and hayfields under the climate change conditions?

To a great extent ☐ to some extent ☐ difficult to answer ☐

If you believe that raising the level of knowledge will help improving the adaptation of natural and agricultural landscapes, please answer which training topics would you choose?

1. The causes of global climate change and projected impacts in Armenia.
   yes ☐ no ☐

2. Increase of adaptation to natural and agricultural landscapes (pastures, hayfields, forest areas, orchards, etc.) under the conditions of global climate change
   yes ☐ no ☐

3. International experience in climate-wise "clever" methods of farming under climate change conditions and investment opportunities in Armenia
   yes ☐ no ☐

4. Efficient livestock management techniques
   yes ☐ no ☐

5. Other topics –please specify
   yes ☐ no ☐

_____
_____

Thank you

Annex3

«Հայաստանի բնության հատուկ պահպանվող տարածքներին հարակից համայնքներում հողատարածքների հարմարվողականության ներուժի բարձրացում»

List of participants for the discussion of fully-developed project document on "Strengthening land based adaptation capacity in communities adjacent to protected areas in Armenia"

«20» հուլիսի 2018

ք. Դիլիջան (Dilijan)

Հ/հ/ No	Անուն, ազգանուն/Name, surname	Պաշտոնը/Position	Սեռը/Sex Արական/իգական Male/female	Հեռախոս/Էլ. հասցե/Telephone/ email	Ստորագրություն/ Signature
1.	[illegible]	[illegible]	ար.	094000511	[signature]
2.	[illegible]	[illegible]	ար	077-07-07-55	[signature]
3.	[illegible]	[illegible]	ար	077.075004	[signature]
4.	[illegible]	[illegible]	ար	098-30-93-50	[signature]
5.	[illegible]	[illegible]	ար	094 949009	[signature]
6.	[illegible]	[illegible]	ար	093372298	[signature]
7.	[illegible]	[illegible]	ար	093302953	[signature]
8.	[illegible]	[illegible]	ար	094 77-49-11	[signature]
9.	[illegible]	[illegible]	ար	091285507	[signature]
10.	[illegible]	[illegible]	ար	091 227460	[signature]

11.				09419 05 19	
12.				0790001906	

«Հայաստանի բնության հատուկ պահպանվող տարածքներին հարակից համայնքներում հողատարածքների հարմարվողականության ներուժի բարձրացում»

List of participants for the discussion of fully-developed project document on "Strengthening land based adaptation capacity in communities adjacent to protected areas in Armenia"

«06» մայիսի 2018

Համայնք Haghartsin

Հ/հ/ No	Անուն, ազգանուն/Name, surname	Պաշտոնը/Position	Սեռը/Sex Արական/իգական Male/female	Հեռախոս/էլ. հասցե/Telephone/ email	Ստորագրություն/ Signature
1.	[illegible]	Ուսանող	իգական	094 493346 aspi.tamarzya@gmail.com	[signature]
2.	[illegible]	աշակերտ	իգական	094244010	[signature]
3.	[illegible] Համբարձումյան	աշակերտ	իգական	077 16 49 48	[signature]
4.	Լիլիթ [illegible]	աշակերտ	իգական	077 260 862	[signature]
5.	Տաթևիկ Գուլինյան	աշակերտ	իգական	077 180135 tatevgulinyan2002@mail.r	[signature]
6.	Մարիամ Գալոյան	ուսանող	իգական	093770237 mariam.galojan1999@	[signature]
7.	Մերի Խաչատրյան	աշակերտ	իգական	094-46-38-79	[signature]
8.	[illegible]	աշակերտ	իգական	098-523761	[signature]
9.	Նելլի Գասպարյան	աշակերտ	իգական	098982484	[signature]
10.	[illegible]	աշակերտ	իգական	094050046	[signature]
11.	Մարի Համբարձումյան	աշակերտ	իգական	097288933	[signature]
12.	Լիլիթ [illegible]	աշակերտ	իգական	098033597	[signature]
13	[illegible] Համբարձումյան	աշակերտ	իգական	094-680-315	[signature]

«Հայաստանի բնության հատուկ պահպանվող տարածքներին հարակից համայնքներում հողատարածքների հարմարվողականության ներուժի բարձրացում»

List of participants for the discussion of fully-developed project document on "Strengthening land based adaptation capacity in communities adjacent to protected areas in Armenia"

« 27 » 05. 2018 2018

Հաղարծին Haghartsin

Հ/հ/ No	Անուն, ազգանուն/Name, surname	Պաշտոնը/Position	Սեռը/Sex Արական/իգական Male/female	Հեռախոս/էլ. հասցե/Telephone/ email	Ստորագրություն/ Signature
1.	Սարգսյան Հրանտ	—	արական	093.48.10.89	
2.	Գրիգորյան Սիրելլա	ուսուցիչ	իգական	093.70.38.14.	
3.	Խաչատրյան Հրաչիկ	—	արական.	094784326.	
4.	Հովհաննիսյան Ռուզաննա	բուժքույր	իգական	093607721	
5.	Պարիկյան Ռուզաննա	բուժկետի աշխատակից	իգ.	093799926	
6.	Դավթյան Լիանա	ուսուցչուհի	իգ.	077464209	
7.	Պարիկյան Պողոս	վարորդ	ար.	093737471	
8.	Լուսինե	մանկապարտեզի դաստիարակ	իգ.	094395116	
9.					
10.					
11.					
12.					

«Հայաստանի բնության հատուկ պահպանվող տարածքներին հարակից համայնքներում հողատարածքների հարմարվողականության ներուժի բարձրացում»

List of participants for the discussion of fully-developed project document on "Strengthening land based adaptation capacity in communities adjacent to protected areas in Armenia"

« 27 » 05 2018

Համայնքում Haghartsin

Հ/հ/ No	Անուն, ազգանուն/Name, surname	Պաշտոնը/Position	Սեռը/Sex Արական/իգական Male/female	Հեռախոս/էլ. հասցե/Telephone/ email	Ստորագրություն/ Signature
1.	Հովհաննիսյան Օլյա	Գործավար, քարտուղար	իգական		[signature]
2.	Սողոմոնյան Ռաֆայել	(վարորդ)	արական	077-30-97-53	[signature]
3.	Պողոսյան Անուշ	– (թոշակառու)	իգական	093160351	[signature]
4.	Ղազարյան Արամ	(ֆերմեր)	արական	094426266	[signature]
5.	Հովհաննիսյան Հասմիկ	ուսուցիչ	իգական	077230055	[signature]
6.	Գաբրիելյան Աշոտ	ուսանող	արական	093722282	[signature]
7.	Պողոսյան Մարգարիտա	ուսուցիչ	իգական		[signature]
8.	Խաչատրյան Արթուր	վարորդ	արական	094-81-95-55	[signature]
9.	Ղամբարյան Անահիտ	ուսուցիչ	իգական	094585917 xambaryans5@mail...	[signature]
10.	Ղամբարյան Վարդան	ՀՀ ԲԶՓ ...	արական	094-39-49-45	[signature]
11.	Ավետիսյան Արթուր	վարորդ	արական	077893570	[signature]
12.	Քոչարյան [illegible]	խոհարար [illegible]	իգական	093393766	[signature]

«Հայաստանի բնության հատուկ պահպանվող տարածքներին հարակից համայնքներում հողատարածքների հարմարվողականության ներուժի բարձրացում»

List of participants for the discussion of fully-developed project document on "Strengthening land based adaptation capacity in communities adjacent to protected areas in Armenia"

« 06 » 07 2018

Մարզահովիտ Margahovit

Հ/հ/ No	Անուն, ազգանուն/Name, surname	Պաշտոնը/Position	Սեռը/Sex Արական/իգական Male/female	Հեռախոս/էլ. հասցե/Telephone/ email	Ստորագրություն/ Signature
1.	[illegible]	[illegible]	արական	091214146	[signature]
2.	[illegible]	[illegible]	արական	091368825	[signature]
3.	[illegible]	[illegible]	իգական	098963825.	[signature]
4.	[illegible]	[illegible]	արական	091285507	[signature]
5.	[illegible]	Ֆինանսիստ	արական	089400401	[signature]
6.	[illegible]	[illegible]	արական	094.39.19.86	[signature]
7.	[illegible]	[illegible]	արական	096063086	[signature]
8.	[illegible]	ագրոնոմ	արական	091-22-79-60	[signature]
9.	[illegible]	Տնտեսվար	արական	077580967	[signature]
10.					
11.					
12.					

«Հայաստանի բնության հատուկ պահպանվող տարածքներին հարակից համայնքներում հողատարածքների հարմարվողականության ներուժի բարձրացում»

List of participants for the discussion of fully-developed project document on "Strengthening land based adaptation capacity in communities adjacent to protected areas in Armenia"

«06» [illegible] 2018

Խաչարձան Khachardzan

Հ/հ/ No	Անուն, ազգանուն/Name, surname	Պաշտոնը/Position	Սեռը/Sex Արական/իգական Male/female	Հեռախոս/էլ. հասցե/Telephone/ email	Ստորագրություն/ Signature
1.	[illegible]	[illegible]	[illegible]	093 34 45 59	[illegible]
2.	[illegible]	[illegible]	[illegible]	094934939.	[illegible]
3.	[illegible]	[illegible]	[illegible]	077-63-53-50	[illegible]
4.	[illegible]	[illegible]	[illegible]	077 771676	[illegible]
5.	[illegible]	[illegible]	[illegible]	093181274	[illegible]
6.	[illegible]	[illegible]	[illegible]	077927779	[illegible]
7.	[illegible]	[illegible]	[illegible]	094-032920	[illegible]
8.	[illegible]	[illegible]	[illegible]	093031588	[illegible]
9.	[illegible]	[illegible]	[illegible]	077898280	[illegible]
10.	[illegible]		[illegible]	077302959	[illegible]
11.	[illegible]		[illegible]		[illegible]
12.	[illegible]		[illegible]	093951197	[illegible]

«Հայաստանի բնության հատուկ պահպանվող տարածքներին հարակից համայնքներում հողատարածքների հարմարվողականության ներուժի բարձրացում»

List of participants for the discussion of fully-developed project document on "Strengthening land based adaptation capacity in communities adjacent to protected areas in Armenia"

«23» 06 2018

Խաչարձան Khachardzan

Հ/հ/ No	Անուն, ազգանուն/Name, surname	Պաշտոնը/Position	Սեռը/Sex Արական/իգական Male/female	Հեռախոս/էլ. հասցե/Telephone/ email	Ստորագրություն/ Signature
1.	[illegible]	[illegible]	[illegible]	077-63-53-50	[illegible]
2.	[illegible]	[illegible]	[illegible]	093 46 84 76	[illegible]
3.	[illegible]	[illegible]	[illegible]	094934939	[illegible]
4.	[illegible]	[illegible]	[illegible]	093502919	[illegible]
5.	[illegible]	[illegible]	[illegible]	09800552 7	[illegible]
6.	[illegible]	[illegible]	[illegible]	094-84 24 96	[illegible]
7.	[illegible]	[illegible]	[illegible]	098632844	[illegible]
8.	[illegible]	[illegible]	[illegible]	093470056	[illegible]
9.					
10.					
11.					
12.					

«Հայաստանի բնության հատուկ պահպանվող տարածքներին հարակից համայնքներում հողատարածքների հարմարվողականության ներուժի բարձրացում»

List of participants for the discussion of fully-developed project document on "Strengthening land based adaptation capacity in communities adjacent to protected areas in Armenia"

«06» [illegible] 2018

Աղավնավանք Aghavnavang

Հ/հ/ No	Անուն, ազգանուն/Name, surname	Պաշտոնը/Position	Սեռը/Sex Արական/իգական Male/female	Հեռախոս/էլ. հասցե/Telephone/ email	Ստորագրություն/ Signature
1.	Տաթևիկ Սահակյան	[illegible]	իգական	094141294 tatev.sahakyan_91@mail.ru	
2.	Էրանուհի Սարգսյան	—	իգական	098 24 08 95 eranuhi.sargsyan@yandex.ru	
3.	[illegible]	[illegible]	իգական	094-27-40-18	
4.	[illegible]	[illegible]	արական	094 77-49-11	
5.	[illegible]		արական	077-47-48-45	

«Հայաստանի բնության հատուկ պահպանվող տարածքներին հարակից համայնքներում հողատարածքների հարմարվողականության ներուժի բարձրացում»

List of participants for the discussion of fully-developed project document on "Strengthening land based adaptation capacity in communities adjacent to protected areas in Armenia"

«22» նոյեմբեր 2018

Աղավնավանք Aghavnavang

Հ/հ/ No	Անուն, ազգանուն/Name, surname	Պաշտոնը/Position	Սեռը/Sex Արական/իգական Male/female	Հեռախոս/էլ. հասցե/Telephone/ email	Ստորագրություն/ Signature
1.	[illegible]		ար.	094004199	[signature]
2.	[illegible]		ար	093 5967 79	[signature]
3.	[illegible]		ար	093030706	[signature]
4.	[illegible]		ար	077-24-92-28	[signature]
5.	[illegible]		ար	077-47-48-45	[signature]
6.	[illegible]		իգ	098-24-08-95	[signature]
7.	[illegible]		իգ	094 02 12 54	[signature]
8.	[illegible]		իգ	094-27-40-19	[signature]
9.	[illegible]		իգ	077-60-12-73	[signature]
10.	[illegible]		ար		
11.					
12.					

«Հայաստանի բնության հատուկ պահպանվող տարածքներին հարակից համայնքներում հողատարածքների հարմարվողականության ներուժի բարձրացում»

List of participants for the discussion of fully-developed project document on "Strengthening land based adaptation capacity in communities adjacent to protected areas in Armenia"

«06» հուլիսի 2018

ք. Դիլիջան Dilijan

Հ/հ/ No	Անուն, ազգանուն/Name, surname	Պաշտոնը/Position	Սեռը/Sex Արական/իգական Male/female	Հեռախոս/էլ. հասցե/Telephone/ email	Ստորագրություն/ Signature
1.	[illegible]	[illegible]	իգական	077180580 [illegible]	[signature]
2.	[illegible]	[illegible]	իգ.	sona@gmail.com	[signature]
3.	[illegible]	[illegible]	իգ. 094850696	Kharatyantaguhi@gmail.com shushanhakyan@gmail.com	[signature]
4.	[illegible]	[illegible]	[illegible] 093767557	marushhovnanyan@gmail	[signature]
5.	[illegible]	[illegible]	արական	094483534 ngoecopolicy@gmail.com	[signature]
6.	[illegible]	[illegible]	[illegible]	099043942 arminchomino@mail.ru dilnetservice@mail.ru	[signature]
7.					

«Հայաստանի բնության հատուկ պահպանվող տարածքներին հարակից համայնքներում հողատարածքների հարմարվողականության ներուժի բարձրացում»

List of participants for the discussion of fully-developed project document on "Strengthening land based adaptation capacity in communities adjacent to protected areas in Armenia"

«13» նոյեմբերի 2018

Ուրցաձոր /բնակիչներ/

Urtsadzor

Հ/h/ No	Անուն, ազգանուն/Name, surname	Պաշտոնը/Position	Սեռը/Sex Արական/իգական Male/female	Հեռախոս/էլ. հասցե/Telephone/ email	Ստորագրություն/ Signature
1.	[illegible]	[illegible]	արական?	094425842	[signature]
2.	[illegible]	[illegible]	արական?	098102546	[signature]
3.	[illegible]	[illegible]	իգական?	093756105	[signature]
4.	[illegible]	[illegible]	արական?	093-74-39-61	[signature]
5.	[illegible]	[illegible]	արական?	077154466	[signature]
6.	[illegible]	[illegible]	արական?	094 10-88-35	[signature]
7.	[illegible]	[illegible]	արական?	093 49428	[signature]
8.	[illegible]	[illegible]	Արական?	093037939	[signature]
9.	[illegible]	[illegible]	իգական?	093558529	[signature]
10.	[illegible]	[illegible]	[illegible]	098-8072-06	[signature]

«Հայաստանի բնության հատուկ պահպանվող տարածքներին հարակից համայնքներում հողատարածքների հարմարվողականության ներուժի բարձրացում»

List of participants for the discussion of fully-developed project document on "Strengthening land based adaptation capacity in communities adjacent to protected areas in Armenia"

« 13 » [illegible] 2018

Ուրցաձոր /դպրոց/

Urtsadzor (school)

Հ/h/ No	Անուն, ազգանուն/Name, surname	Պաշտոնը/Position	Սեռը/Sex Արական/իգական Male/female	Հեռախոս/էլ. հասցե/Telephone/ email	Ստորագրություն/ Signature
1.	[illegible]	[illegible]	իգ.	094316355	[signature]
2.	[illegible]	[illegible]	իգ.	077.123495	[signature]
3.	[illegible]	ուսուցիչ	իգ.	044-84-25-75	[signature]
4.	[illegible]	[illegible]	իգ.	94 31-13-58	[signature]
5.	[illegible]	ուսուցիչ	իգ.	091795860 094 42 68 73	[signature]
6.	[illegible]	ուսուցիչ	իգ.	093-212350	[signature]
7.	[illegible]	ուսուցիչ	իգ.	077 743216	[signature]
8.	[illegible]	ուսուցիչ	իգ.	094351268	[signature]
9.	[illegible]	[illegible]	ար.	094179714	[signature]
10.	[illegible]	ուսուցիչ	իգ.	094 71-24-34	[signature]

11.	[illegible]	[illegible]	[illegible]	09845346	[illegible]
12.	[illegible]	[illegible]	[illegible]	098043554	[illegible]
13.	[illegible]	[illegible]	[illegible]	07790945	[illegible]
14.	[illegible]	[illegible]	[illegible]	094 95-81-12	[illegible]
15.	[illegible]	[illegible]	[illegible]	09476168	[illegible]
16.	[illegible]	[illegible]	[illegible]	093094470	[illegible]
17.	[illegible]	[illegible]	[illegible]	093-9394-97	[illegible]
18.	[illegible]	[illegible]	[illegible]	077-12-62-94	[illegible]

«Հայաստանի բնության հատուկ պահպանվող տարածքներին հարակից համայնքներում հողատարածքների հարմարվողականության ներուժի բարձրացում»

List of participants for the discussion of fully-developed project document on "Strengthening land based adaptation capacity in communities adjacent to protected areas in Armenia"

« 17 » հունիսի 2018

Ուրցաձոր /բնակիչներ/
Urtsadzor

Հ/հ/ No	Անուն, ազգանուն/Name, surname	Պաշտոնը/Position	Սեռը/Sex Արական/իգական Male/female	Հեռախոս/էլ. հասցե/Telephone/ email	Ստորագրություն/ Signature
1.	[illegible]	ուսուցիչ	արական	094179714	[signature]
2.	[illegible]	[illegible] աշխատող?	իգական	077335800	[signature]
3.	[illegible]	տնտեսուհի?	իգական	094209939	[signature]
4.	[illegible]	[illegible]	իգական	094858299	[signature]
5.	[illegible]	[illegible]	արական	0[illegible]858299	[signature]
6.	[illegible]	[illegible]	իգական	8-6-5-41.	[signature]
7.	[illegible]	[illegible]	իգական	094853882	[signature]
8.	[illegible]	[illegible] աշխատող?	իգական	8-6-4-78	[signature]
9.	[illegible]	[illegible]	իգական	077-85-84-92	[signature]
10.	[illegible]	Բանվոր	արական	077-85-84-95	[signature]
11.	[illegible]	[illegible]	իգական	094-24-12-38	[signature]

12.					
13.		18 [illegible] 20[illegible]р			
14.	[illegible]	[illegible]	[illegible]	093-90-18-12	[illegible]
15.	[illegible]	[illegible]	[illegible]	077-02-32-10	[illegible]
16.	[illegible]	[illegible]	[illegible]	094-11-24-46	[illegible]
17.	[illegible]	[illegible]	[illegible]	094-11-48-95	[illegible]
18.	[illegible]	[illegible]	[illegible]	094-85-28-03	[illegible]

«Հայաստանի բնության հատուկ պահպանվող տարածքներին հարակից համայնքներում հողատարածքների հարմարվողականության ներուժի բարձրացում»

List of participants for the discussion of fully-developed project document on "Strengthening land based adaptation capacity in communities adjacent to protected areas in Armenia"

« 18 » Հունիսի 2018 թ.

Ուրցաձոր /բնակիչներ/
Urtsadzor

Հ/h/ No	Անուն, ազգանուն/Name, surname	Պաշտոնը/Position	Սեռը/Sex Արական/իգական Male/female	Հեռախոս/էլ. հասցե/Telephone/ email	Ստորագրություն/ Signature
1.	[illegible]	—	Արական	098-14-00-84	[signature]
2.	[illegible]	[illegible]	Արական	093-60-29-34	[signature]
3.	[illegible]	[illegible]	Արական	094-10-77-35	[signature]
4.	[illegible]	[illegible]	Արական	093-60-29-34	[signature]
5.	[illegible]	[illegible]	Արական	077-90-38-41	[signature]
6.	[illegible]	—	Արական	096-07-44-41	[signature]
7.	[illegible]	—	Արական	044-24-23-13	[signature]
8.	[illegible]	[illegible]	Արական	077-07-09-45	[signature]
9.	[illegible]		Արական	055-20-62-61	[signature]
10.	[illegible]	[illegible]	[illegible]	094455598	[signature]

11.	[illegible]	[illegible]	[illegible]	0983057905	
12.	[illegible]	[illegible]	[illegible]	0937074226	
13.	[illegible]	[illegible]	[illegible]	093-71-0541	
14.	[illegible]	[illegible]	[illegible]	098-49-28-29	
15.	[illegible]	[illegible]	[illegible]	094-22-19-41	
16.	[illegible]	[illegible]	[illegible]	094-64-90-68	
17.	[illegible]	[illegible]	[illegible]	093-64-90-68	
18.	[illegible]	[illegible]	[illegible]	077.537.600	
19.	[illegible]	[illegible]	[illegible]	077-28-09-93	
20.					

«Հայաստանի բնության հատուկ պահպանվող տարածքներին հարակից համայնքներում հողատարածքների հարմարվողականության ներուժի բարձրացում»

List of participants for the discussion of fully-developed project document on "Strengthening land based adaptation capacity in communities adjacent to protected areas in Armenia"

«13» հունիսի 2018

Շաղափ Տեղեր

Հ/հ/ No	Անուն, ազգանուն/Name, surname	Պաշտոնը/Position	Սեռը/Sex Արական/իգական Male/female	Հեռախոս/էլ. հասցե/Telephone/ email	Ստորագրություն/ Signature
1.	[illegible]	[illegible]	[illegible]	094 10-20 47	
2.	[illegible]	[illegible]	ա/	099010123	
3.	[illegible]	[illegible]	ար	094 66-31-26	
4.	[illegible]	[illegible]	իգ.	098 598875	
5.	[illegible]	[illegible]	արական	077887244	
6.	[illegible]	2-րդ կարգի [illegible]	իգ.	077-99-00-48	
7.	[illegible]	[illegible]	իգ	094-93-65-50	
8.	[illegible]	[illegible]	արական	077780172	
9.	[illegible]	[illegible]	արական	093 99 71 35	
10.	[illegible]	[illegible]	[illegible]	077 94 33 69	

11.					
12.					
13.					
14.					
15.					
16.					

«Հայաստանի բնության հատուկ պահպանվող տարածքներին հարակից համայնքներում հողատարածքների հարմարվողականության ներուժի բարձրացում»

List of participants for the discussion of fully-developed project document on "Strengthening land based adaptation capacity in communities adjacent to protected areas in Armenia"

«23-24 նոյեմբերի 2018

Ուրցաձոր Urtsadzor

Հ/հ/ No	Անուն, ազգանուն/Name, surname	Պաշտոնը/Position	Սեռը/Sex Արական/իգական Male/female	Հեռախոս/էլ. հասցե/Telephone/ email	Ստորագրություն/ Signature
1.	[illegible]	[illegible] / բնակիչ	արական	0948528[illegible]	[signature]
2.	[illegible]	[illegible] / [illegible]	արական	077.0[illegible]09.65	[signature]
3.	[illegible]	[illegible]	իգական	093457096	[signature]
4.	[illegible]	[illegible]	արական	093501195	[signature]
5.	[illegible]	[illegible]	արական	077710541	[signature]
6.	[illegible]	Հաշվապահ	արական	096315160	[signature]
7.	[illegible]	[illegible]	արական	093826430	[signature]
8.	[illegible]	Թոշակառու	իգական	094-06 55 85	[signature]
9.	[illegible]	Բնակիչ	արական	077834211	[signature]
10.	[illegible]	Բնակիչ / Համայնք	արական	093 57 29 70	[signature]
11.	[illegible]	բնակիչ / Համայնք	արական	094-45-68-71	[signature]
12.	[illegible] Գևորգյան	~~Գևորգյան~~ բնակիչ	իգական	098-30-66-65	[signature]

«Հայաստանի բնության հատուկ պահպանվող տարածքներին հարակից համայնքներում հողատարածքների հարմարվողականության ներուժի բարձրացում»

List of participants for the discussion of fully-developed project document on "Strengthening land based adaptation capacity in communities adjacent to protected areas in Armenia"

« 01» օգոստոս 2018թ. 01 august 2018

Մարզպետարաններ

Հ/հ/ No	Անուն, ազգանուն/Name, surname	Պաշտոնը/Position	Սեռը/Sex , Արական/իգական Male/female	Հեռախոս/էլ. հասցե/Telephone/ email	Ստորագրություն/ Signature
ՏԱՎՈՒՇԻ ՄԱՐԶՊԵՏԱՐԱՆ / TAVUSH MARZPETARAN					
1.	[illegible]	[illegible]	[illegible]	094 940019 vardan-alexsan	[illegible]
2.					
3.					
ԼՈՌՈՒ ՄԱՐԶՊԵՏԱՐԱՆ / LORI MARZPETARAN					
1.	[illegible]	[illegible]	[illegible]	093-24-56-86	[illegible]
2.					
3.					
ԱՐԱՐԱՏԻ ՄԱՐԶՊԵՏԱՐԱՆ / ARARAT MARZPETARAN					
1.	[illegible]	[illegible]	[illegible]	0333543 28	[illegible]
2.	[illegible]	[illegible]	[illegible]	0-93) 93-89-81	[illegible]
3.	[illegible]	[illegible]	[illegible]	095045024	[illegible]

«Հայաստանի բնության հատուկ պահպանվող տարածքներին հարակից համայնքներում հողատարածքների հարմարվողականության ներուժի բարձրացում»

List of participants for the discussion of fully-developed project document on "Strengthening land based adaptation capacity in communities adjacent to protected areas in Armenia"

«01» օգոստոս 2018թ. 01 august 2018

Բնապահպանության նախարարություն / Ministry of Nature Protection

Հ/հ/ No	Անուն, ազգանուն/Name, surname	Պաշտոնը/Position	Սեռը/Sex Արական/իգական Male/female	Հեռախոս/էլ. հասցե/Telephone/ email	Ստորագրություն/ Signature
1.	[illegible]	[illegible]	[illegible]	[illegible]	
2.	[illegible]	[illegible]	[illegible]	[illegible]	
3.	[illegible]	[illegible]	[illegible]	[illegible]	
4.	[illegible]	[illegible]	[illegible]	[illegible]	
5.	[illegible]	[illegible]	[illegible]	[illegible]	
6.	[illegible]	[illegible]	[illegible]	[illegible]	
7.	[illegible]	[illegible]	[illegible]	[illegible]	
8.					

«Հայաստանի բնության ոչտուկ պահպանվող տարածքներին հարակից համայնքներում հողատարածքների հարմարվողականության ներուժի բարձրացում»

List of participants for the discussion of fully-developed project document on "Strengthening land based adaptation capacity in communities adjacent to protected areas in Armenia"

«01» օգոստոս 2018թ. 01 august 2018

Դիլիջանի համայնքապետարան/ Dilijan

Հ/հ/ No	Անուն, ազգանուն/Name, surname	Պաշտոնը/Position	Սեռը/Sex Արական/իգական Male/female	Հեռախոս/էլ. հասցե/Telephone/ email	Ստորագրություն/ Signature
1.	[illegible]	[illegible]		093372248 horq.tevushk@gmail.com	
2.	[illegible]	[illegible]		077-07-07-55	
3.	[illegible]	[illegible]		093302853	
4.	[illegible]	[illegible]		098-30-93-50	
5.	[illegible]	[illegible]		094 77-49-11	
6.	[illegible]	[illegible]		094000511	
7.	[illegible]	[illegible]	այր.	094.39.49.86	

«Հայաստանի բնության հատուկ պահպանվող տարածքներին հարակից համայնքներում հողատարածքների հարմարվողականության ներուժի բարձրացում»

List of participants for the discussion of fully-developed project document on "Strengthening land based adaptation capacity in communities adjacent to protected areas in Armenia"

«01» օգոստոս 2018թ.

01 august 2018

Ուրցաձոր / Urtsadzor

Հ/հ/ Nº	Անուն, ազգանուն/Name, surname	Պաշտոնը/Position	Սեռը/Sex Արական/իգական Male/female	Հեռախոս/էլ. հասցե/Telephone/ email	Ստորագրություն/ Signature
1.	[illegible]	[illegible]	[illegible]	094 425842	[illegible]
2.	[illegible]	[illegible]	[illegible]	094103835	[illegible]
3.	[illegible]	[illegible]	[illegible]	09645080	[illegible]
4.	[illegible]	[illegible]	[illegible]	093037939	[illegible]
5.	[illegible]	[illegible]	[illegible]	094126517	[illegible]
6.	[illegible]	[illegible]	[illegible]	093303449	[illegible]
7.	[illegible]	[illegible]	[illegible]	093444296	[illegible]
8.	[illegible]	[illegible]	[illegible]	093558529	[illegible]
9.	[illegible]	[illegible]	[illegible]	094787895	[illegible]

«01» օգոստոս 2018թ. 01 august 2018

«Խոսրովի անտառ» պետական արգելոց» ՊՈԱԿ / "Khosrov Forest" State Reserve" SNCO

Հ/հ/ No	Անուն, ազգանուն/Name, surname	Պաշտոնը/Position	Սեռը/Sex Արական/իգական Male/female	Հեռախոս/էլ. հասցե/Telephone/ email	Ստորագրություն/ Signature
1.	[illegible]	[illegible]	իգ.	098322364	[signature]
2.	[illegible]	[illegible]	իգ.	077 85 31 43. [illegible]@gmail.com	[signature]
3.	[illegible]	[illegible]	իգ.	093 94 70 51 arminе[illegible]	[signature]
4.	[illegible]	[illegible]	ար.	094 10 66 62 officekhosrov@mail.ru	[signature]
5.	[illegible]	[illegible]	ար.	093957773 officeKHOSrov@ma[illegible]	[signature]
«Դիլիջան» ազգային պարկ» ՊՈԱԿ / "Dilijan" National Park" SNCO					
1.	[illegible]	[illegible]	[illegible]	094190519	[signature]
2.	[illegible]	[illegible]	ար.	096 001986	[signature]
3.	[illegible]	[illegible]	իգ	096040994	[signature]
4.					

«Հայաստանի բնության հատուկ պահպանվող տարածքներին հարակից համայնքներում հողատարածքների հարմարվողականության ներուժի բարձրացում»

List of participants for the discussion of fully-developed project document on "Strengthening land based adaptation capacity in communities adjacent to protected areas in Armenia"

«01» օգոստոս 2018թ. 01 august 2018

Մարգահովիտ / Margahovit

Հ/հ/ No	Անուն, ազգանուն/Name, surname	Պաշտոնը/Position	Սեռը/Sex Արական/իգական Male/female	Հեռախոս/էլ. հասցե/Telephone/ email	Ստորագրություն/ Signature
1.	[illegible]	[illegible]	[illegible]	093334477	
2.	[illegible]	[illegible]	[illegible]	094.39.19.86	
3.					
4.					
Ֆիոլետովո / Фиолетово / Fioletovo					
1.	[illegible]	[illegible]	[illegible]	091651093	

«Հայաստանի բնության հատուկ պահպանվող տարածքներին հարակից համայնքներում հողատարածքների հարմարվողականության ներուժի բարձրացում»

List of participants for the discussion of fully-developed project document on "Strengthening land based adaptation capacity in communities adjacent to protected areas in Armenia"

«01» օգոստոս 2018թ.

01 august 2018

Փորձագետներ / Experts

Հ/հ/ No	Անուն, ազգանուն/Name, surname	Պաշտոնը/Position	Սեռը/Sex Արական/իգական Male/female	Հեռախոս/էլ. հասցե/Telephone/ email	Ստորագրություն/ Signature
1.	[illegible]	[illegible]	[illegible]	091241146	[illegible]
2.	[illegible]	[illegible]	[illegible]	091285507	[illegible]
3.	[illegible]	[illegible]	[illegible]	093202228	[illegible]
4.	[illegible]	[illegible]	[illegible]	098098006	[illegible]
5.	[illegible]	[illegible]	[illegible]	055236863	[illegible]
6.	[illegible]	[illegible]	[illegible]	091130483	[illegible]

Annex 4

ԱՐՁԱՆԱԳՐՈՒԹՅՈՒՆ

Հարմարվողականության հիմնադրամին ներկայացվող «Հայաստանի բնության հատուկ պահպանվող տարածքներին հարակից համայնքներում հողատարածքների հարմարվողականության ներուժի բարձրացում» ծրագրի շրջանակներում Դիլիջան քաղաքում կազմակերպված քննարկումների արդյունքների վերաբերյալ

Dilijan
<<20>> հուլիս 2018թ.

Օրակարգ՝
1. Հարմարվողականության հիմնադրամին ներկայացված «Հայաստանի բնության հատուկ պահպանվող տարածքներին հարակից համայնքներում հողատարածքների հարմարվողականության ներուժի բարձրացում» ծրագրի հայեցակարգի հիմնադրույթների ներկայացում:
2. Դիլիջան, Մարգահովիտ և Ֆիոլետովո համայնքներում նախատեսվող աշխատանքների ներկայացում:
3. Քննարկումներ:

Որոշեցին՝

1. [illegible]

2. [illegible]

3. [illegible]

4. [illegible]

5. [illegible]

Դիլիջան համայնքի ղեկավար՝ [signature] Ա.Սանթրոսյան

Կ.Տ

ԱՐՁԱՆԱԳՐՈՒԹՅՈՒՆ

Թեղուտ [illegible] <<23>> 06 2018թ.

Օրակարգ՝

1. Հարմարվողականության հիմնադրամին ներկայացված «Հայաստանի բնության հատուկ պահպանվող տարածքներին հարակից համայնքներում հողատարածքների հարմարվողականության ներուժի բարձրացում» ծրագրի հայեցակարգի ներկայացում:

2. Ծրագրով նախատեսված աշխատանքների քննարկում:

Որոշեցին՝

1. [illegible]

2. [illegible]

3. [illegible]

4. [illegible]

[illegible]

Կ.Տ

ԱՐՁԱՆԱԳՐՈՒԹՅՈՒՆ

Աղավնավանքի համայնքային կենտրոնում <<23>> 06 2018թ.
Azhavnavang

Օրակարգ՝

1. Համարվողականության հիմնադրամին ներկայացված «Հայաստանի բնության հատուկ պահպանվող տարածքներին հարակից համայնքներում հողատարածքների հարմարվողականության ներուժի բարձրացում» ծրագրի հայեցակարգի ներկայացում:

2. Ծրագրով նախատեսված աշխատանքների քննարկում:

Որոշեցին՝

1. [illegible]

2. [illegible] 108 հա [illegible]

3. [illegible]

4. 1,4 հա [illegible] և 0,4 հա [illegible] 500 m^2 [illegible]

5. [illegible] 1 [illegible], 1 [illegible]

[illegible]

Կ.Տ [illegible]

ԱՐՁԱՆԱԳՐՈՒԹՅՈՒՆ

Հաղարծին [illegible] «25» 06 2018թ.
Haghartsin

Օրակարգ՝

1. Հարմարվողականության հիմնադրամին ներկայացված «Հայաստանի բնության հատուկ պահպանվող տարածքներին հարակից համայնքներում հողատարածքների հարմարվողականության ներուժի բարձրացում» ծրագրի հայեցակարգի ներկայացում:
2. Ծրագրով նախատեսված աշխատանքների քննարկում:

Որոշեցին՝

1. [illegible]
2. [illegible] 1,5 հա [illegible]
3. [illegible]
4. [illegible] 2,0 հա [illegible] և 0,5 հա [illegible]

Կ.Տ [illegible]

ԱՐՁԱՆԱԳՐՈՒԹՅՈՒՆ

Խաչարձան [illegible] «23» 06 2018թ.
Khachardzan

Օրակարգ՝
1. Համարվողականության հիմնադրամին ներկայացված «Հայաստանի բնության հատուկ պահպանվող տարածքներին հարակից համայնքներում հողատարածքների համարվողականության ներուժի բարձրացում» ծրագրի հայեցակարգի ներկայացում:
2. Ծրագրով նախատեսված աշխատանքների քննարկում:

Որոշեցին՝
1. [illegible]
2. [illegible]
3. [illegible]
4. [illegible]
5. [illegible] 2 [illegible]

Կ.Տ [illegible]

ԱՐՁԱՆԱԳՐՈՒԹՅՈՒՆ

Գոշ[illegible] [illegible] «01» VII 2018թ.

Gosh

Օրակարգ՝

1. Հարմարվողականության հիմնադրամին ներկայացված «Հայաստանի բնության հատուկ պահպանվող տարածքներին հարակից համայնքներում հողատարածքների հարմարվողականության ներուժի բարձրացում» ծրագրի հայեցակարգի ներկայացում:
2. Ծրագրով նախատեսված աշխատանքների քննարկում:

Որոշեցին՝

1. [illegible]
2. [illegible] 5 հա-[illegible]
3. [illegible]

[illegible] 2 [illegible] և 1 [illegible]

Կ.Տ [illegible]

ԱՐՁԱՆԱԳՐՈՒԹՅՈՒՆ Թ_____

<<_05_>> 07 2018թ.

Ֆիոլետովոյի համայնքապետարան

Fioletovo

Օրակարգ՝

1. Հարմարվողականության հիմնադրամի խորհրդի քննարկմանը ներկայացվող «Հայաստանի բնության հատուկ պահպանվող տարածքներին հարակից համայնքներում հողատարածքների հարմարվողականության ներուժի բարձրացում» ծրագրի գործողությունների քննարկումներ:

Որոշեցին՝

1. Пастбища в хорошем состоянии.
Сенокосы в хорошем состоянии.

2. Надо улучшить дороги
Построить мосты хорошо (2 моста)

3. Внедрить новые сорта клубники (1500м²)
Внедрить новые сорта смородины (1000м²)

Տ.Տ.

ԱՐՁԱՆԱԳՐՈՒԹՅՈՒՆ Թ______

<<_04_>> _07_ 2018թ.

Մարգահովիտի համայնքապետարան

Margahovit

Օրակարգ՝

1. Հարմարվողականության հիմնադրամի խորհրդի քննարկմանը ներկայացվող «Հայաստանի բնության հատուկ պահպանվող տարածքներին հարակից համայնքներում հողատարածքների հարմարվողականության ներուժի բարձրացում» ծրագրի գործողությունների քննարկումներ:

Որոշեցին՝

1. Համայնքի ընդհանուր արոտավայրերի 3837 հա-ից արա- ծել չեն օգտագործվում են գյուղամերձ արոտավայրերը միայն 137 հա [illegible] [illegible] պետք է [illegible] [illegible] [illegible] ([illegible], [illegible]) [illegible]:
2. Վարելահողերից (1703 հա) [illegible] չի օգտագործվում. են 85 հա [illegible] պետք է [illegible] [illegible] և [illegible] [illegible] ([illegible], [illegible], [illegible] և այլն) [illegible] [illegible]:
3. Համայնքի [illegible] 26 հա [illegible] [illegible] [illegible] [illegible] [illegible] և [illegible] [illegible] [illegible], [illegible] է [illegible] [illegible] և [illegible] [illegible] [illegible]:
4. [illegible] 2 [illegible], 2 [illegible] [illegible] 5 [illegible] և 1 [illegible] [illegible] [illegible] [illegible]:
5. 5000 $Ս^2$ [illegible] [illegible] (5-ից 15 [illegible]) [illegible] [illegible] [illegible]:

Կ.Տ. Մ. Մ. [illegible]

ԱՐՁԱՆԱԳՐՈՒԹՅՈՒՆ

Ուրցաձոր

Ուրցաձոր ի համայնքապետարան «20» 06 2018թ.

Urtsadzor

Օրակարգ՝

1. Հարմարվողականության հիմնադրամի խորհրդի քննարկմանը ներկայացվող «Հայաստանի բնության հատուկ պահպանվող տարածքներին հարակից համայնքներում հողատարածքների հարմարվողականության ներուժի բարձրացում» ծրագրի հայեցակարգի ներկայացում:

2. Ծրագրով նախատեսված աշխատանքների քննարկում:

Որոշեցին՝

1. [illegible] 40, [illegible] 7 և [illegible] 100 հա [illegible], [illegible] և [illegible]

2. [illegible] և [illegible]:

[illegible] և [illegible]

3. [illegible] և [illegible]:

4. [illegible] 4 հա [illegible], 3 հա [illegible] և 2 հա [illegible]:

5. [illegible] 2,5 հա [illegible] և 2 հա [illegible]

Կ.Տ

ԱՐՁԱՆԱԳՐՈՒԹՅՈՒՆ

Շաղափ

Շաղափի [illegible] «21» 06 2018թ.

Shaghap

Օրակարգ՝

1. Հարմարվողականության հիմնադրամի խորհրդի քննարկմանը ներկայացվող «Հայաստանի բնության հատուկ պահպանվող տարածքներին հարակից համայնքներում հողատարածքների հարմարվողականության ներուժի բարձրացում» ծրագրի հայեցակարգի ներկայացում:

2. Ծրագրով նախատեսված աշխատանքների քննարկում

Որոշեցին՝

1. [illegible] 27 հա-ի վրա, [illegible] 50 հա [illegible] և գ) 101 հա [illegible]

2. [illegible]

3.

Կ.Տ.

[illegible]

Annex 5
Draft

AGREEMENT

on On the maintenance of outcomes of the

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

Between

Ministry of Nature Protection of the Republic of Armenia

And

Dilijan (including, Haghartsin, Aghavnavank, Gosh, Khachardzan, Teghut villages) community of Tavush marz, and Fioletovo and Margahovit communities of Lori marz

« » « » 2018

Agreement on ensuring sustainability of project outcomes of “Strengthening land based adaptation capacity in communities adjacent to protected areas in Armenia” project

AGREEMENT

Preface

The Ministry of Nature Protection of the Republic of Armenia (hereinafter referred to as "the Ministry") and Dilijan community of Tavush marz (including the Haghartsin, Aghavnavank, Gosh, Khachardzan, Teghut Villages), and Fioletovo and Margahovit communities of Lori marz of the Republic of Armenia (hereinafter referred to as the Contracting Parties)

Take into account that the "Environmental Projects Implementation Unit" State Institution of the Ministry of Nature Protection of the Republic of Armenia was accredited by the Adaptation Fund of United Nations Framework Convention on Climate Change according to fund board decision B.28-29.1 from November 4, 2016.

Considering that the vulnerability of the communities adjacent to "Dilijan" National Park under the conditions of climate change needs to be reduced through strengthening the adaptive capacity of the agricultural sector, enforcing institutional and planning opportunities, as well as implementing climate change adaptation measures in the communities.

Recognizing that “Strengthening land based adaptation capacity in communities adjacent to protected areas in Armenia” pilot project is complete and meets the requirements of increasing the level of adaption of natural and agricultural landscapes that have been disturbed due to climate change and anthropogenic impacts.

Emphasizing that the implementation of the project will help the authorities of Dilijan, Fioletovo and Margahovit communities to learn lessons and develop and implement programs for the sustainability of project outcomes.

Agreed upon the following:

Article I

Objectives

1. Increase the level of adaptation of natural and agricultural landscapes in the administrative territory of the communities under the conditions of global climate change;
2. Create sustainable forage base;
3. Introduce non-traditional crops;
4. Promote the improvement of the living conditions of the stakeholders;
5. Increase the population's knowledge on adaptation under the conditions of climate change.

Article II

Cooperation

Contracting parties shall cooperate with each other to provide necessary assistance during the implementation of “Strengthening land based adaptation capacity in communities adjacent to protected areas in Armenia” pilot project, to exchange information and eliminate possible obstacles.

In the cases envisaged in this Article, consultation and exchange of information and documents shall be without prejudice to any procedures which may be required to ensure limitations on confidentiality and accessibility of certain information and documents.

Article III

Project Implementation

The project shall be implemented by the Ministry of Nature Protection of the Republic of Armenia acting through "Environmental Projects Implementation Unit" State Institution by means of a grant provided by the Adaptation Fund of United Nations Framework Convention on Climate Change.

The realization of the project is carried out by "Environmental Projects Implementation Unit" State Institution through competitive selection of an appropriate organization in accordance with the legislation of the Republic of Armenia.

The “Environmental Projects Implementation Unit" State Institution” implements the monitoring of activities and informs the contracting parties about the results.

Reports on completed works are discussed among the contracting parties and an appropriate conclusion is given.

The “Environmental Projects Implementation Unit" State Institution” publishes reports and conclusions of the Contracting Parties on its official website, www.epiu.am. The final results of the activities envisaged by the Project shall be accepted by mutual agreement of the contracting parties.

Article IV

Sustainability of Project Outcomes

For the purpose of ensuring the sustainability of the project results, the contracting parties agree on the following:

1. Communities are in charge of the maintenance, operation, care and renovation of the results of the activities carried out within their administrative boundaries.
2. Communities may apply to the Government of the Republic of Armenia to receive certain assistance for the maintenance and repair of project results, if necessary.
3. The Ministry of Nature Protection of the Republic of Armenia implements permanent monitoring of the project results (quarterly) and reviews the received information with the communities.
4. The communities immediately apply to the Ministry of Nature Protection of the Republic of Armenia and law enforcement agencies in the event of finding any anthropogenic violations of the project results.
5. The elimination of consequences of violations of the project results shall be carried out by the joint efforts of the contracting parties, and, where appropriate, applying to the Government of the Republic of Armenia for the provision adequate resources.

Article V

Term of the Agreement

The Agreement shall enter into force on the date of its signature and shall remain in force for an indefinite period.

The Agreement is signed in Armenian,in five copies. Each contracting party will be given one copy of the agreement.

Amendments and supplements to the Agreement may be made by mutual consent of the Parties by concluding a supplementary agreement which will be an integral part of this Agreement.

Article VI

Notification, addresses

Under this agreement any requested, permitted or presented notification or claim shall be in written form. Such notification or claim shall be deemed duly filed or submitted in the event that it is transmitted in hand, by registered mail, shipper, telegram or cable to the party to which it is required to be delivered or submitted to by the address given below or to any other address that will be announced.

Minister of the Nature Protection of the Republic of Armenia_____

Dilijan community head_____

Fioletovo community head_____

Margahovit community head_____

Degraded steppe slopes, where adaptation is expected to be increased by the establishment of agroforest

Degraded community adjacent pastures

Meeting

Consultation

Orchard

ՀԱՅԱՍՏԱՆԻ ՀԱՆՐԱՊԵՏՈՒԹՅԱՆ ԲՆԱՊԱՀՊԱՆՈՒԹՅԱՆ ՆԱԽԱՐԱՐՈՒԹՅՈՒՆ
ՆԱԽԱՐԱՐ
MINISTRY OF NATURE PROTECTION OF THE REPUBLIC OF ARMENIA
MINISTER
МИНИСТЕРСТВО ОХРАНЫ ПРИРОДЫ РЕСПУБЛИКИ АРМЕНИЯ
МИНИСТР

0010, ք. Երևան, Հանրապետության հր. Կառավարական 3-րդ տուն
3 Government Bldg, Republic Sq, Yerevan, 0010, Armenia
0010, Армения, г.Ереван, Дом правительства, здание N3
էլ.փոստ /E-mail/ эл.почта: min_ecology@mnp.am
Web page: www.mnp.am
(374 11) 818 501
(374 11) 818 506

№ 1/34/11608
«06» «08» 2018թ.

Letter of Endorsement by the Government of the Republic of Armenia

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

Subject: Endorsement for project "Strengthening land based adaptation capacity in communities adjacent to protected areas in Armenia"

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

Accordingly, I am pleased to endorse the above project proposal with support from the Adaptation Fund. If approved, the project will be implemented and executed by "Environmental project implementation unit" State Agency.

Sincerely,

Erik Grigoryan

Minister of Nature Protection of the Republic of Armenia
National focal point of UNFCCC

Meruzhan Galstyan
"EPIU" State Agency
(+37410) 651-631