# FODDER PRODUCTION AND PASTURE IMPROVEMENT AS A COVID-19 RESPONSE MEASURE

## Baseline study report

**15 December, 2021**

ՀԱՅԱՍՏԱՆԻ ՀԱՆՐԱՊԵՏՈՒԹՅԱՆ
ԷԿՈՆՈՄԻԿԱՅԻ ՆԱԽԱՐԱՐՈՒԹՅՈՒՆ

Գերմանական
համագործակցություն
DEUTSCHE ZUSAMMENARBEIT

Implemented by
giz Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH

ՇԲՀՆ

# Contents

# INTRODUCTION

## Objectives and methodology of the baseline study

“Fodder Production and Pasture Improvement as a COVID-19 Response Measure” Project, launched in November, 2021 by Shen NGO and GIZ in collaboration with the Ministry of Economy of the Republic of Armenia, aims at proposing a pilot model for the improvement of pastures and arable lands, the implementation of which will allow to restore the purpose of these land types, increase the income from their exploitation and provide additional fodder production. The Project plans on introducing a land improvement model that will ensure maximum results at minimum cost, an effective combination of best practices and available resources to enable small farms to rehabilitate and improve their privatized or leased land on their own. The proposed actions will also ensure capacity building of the "Pasture user cooperatives" and improve the quality of the offered services.

This study aimed at informing the design and implementation of the Project by collecting baseline data from potential beneficiaries and interested parties regarding their challenges, resources and needs. In particular, the study was structured to address aspects, including, but not limited to:

- Pastures, arable lands, hay meadows – size, ownership, percentage of and reasons for unused lands
- Number of livestock by species and number of herds using pastures
- Sufficiency of locally sourced fodder, and, if insufficient, how the deficit is addressed
- Availability of agricultural machinery in the communities as well as access to it
- Human capital related to pasture management, animal husbandry and agriculture in the communities
- Most important needs of the communities regarding pastures and fodder production
- Relevance of the Project to the existing needs, and interest of the communities and farmers in contributing to the Project

The data was collected between 11 and 29 November, 2021, in three interconnected stages:

- Meetings with Gegharkunik, Shirak and Lori marzpetaran officials with a follow-up questionnaire sent to collect data on the overall situation with respect to land use and animal husbandry in each marz
- Self-administered survey of heads of all selected communities (15 communities in Gegharkunik, 10 settlements of Amasia enlarged community of Shirak, and 7 settlements of Gyulagarak enlarged community of Lori) to collect relevant data regarding each settlement (mostly quantitative data, such as land use, livestock, available resources, etc.)

- Focus groups in all selected communities with participation of farmers, cooperatives, and community leadership (15 separate meetings in each of the selected Gegharkunik communities, joint meetings with representatives of settlements comprising the enlarged communities of Amasia and Gyulagarak) to gain insights into the main issues and needs with respect to fodder production and pasture improvement, collect initial feedback to the Project (including any restrictive factors and potential challenges), and assess the readiness of farmers and communities to contribute to the Project.

Initially, the Project planned conducting the study in 12 communities of Gegharkunik. Three additional communities (Makenis, Lchavan and Lusakunk) were included in the study close to the end of the fieldwork to aid in selection of final beneficiaries, because it was becoming clear that not all of the communities from the initial list were suited for the Project for various reasons, described in the body of this report.

**Table 1. List of communities covered by the study and the number of focus groups participants**

| Community | Number of participants |
|---|---|
| **Gegharkunik marz** | **219** |
| Artsvanist | 16 |
| Gandzak | 20 |
| Karchaghbyur | 22 |
| Khachaghbyur | 10 |
| Lanjaghbyur | 12 |
| Lchavan | 31 |
| Lusakunk | 16 |
| Madina | 5 |
| Makenis | 14 |
| Mets Masrik | 11 |
| Nerkin Getashen | 10 |
| Sarukhan | 13 |
| Tsaghkashen | 15 |
| Vaghashen | 11 |
| Vardenik | 13 |
| **Shirak marz** | **25** |
| Amasia enlarged community | 25 |
| **Lori marz** | **17** |
| Gyulagarak enlarged community | 17 |
| **TOTAL PARTICIPANTS** | **261** |

## Report structure

The first chapter of this report (Context and background) provides an overview of country and marz level data, issues, and needs with respect to fodder production and pasture improvement.

Subsequent chapters cover, in detail, the data collected from each of the 17 communities included in the study.

The concluding section of the report (Conclusions and recommendations) summarizes the findings and provides relevant recommendations to be considered for Project design and implementation.

Survey questionnaires and the focus groups guide, preapproved by GIZ, are included in Annex 1.

# CONTEXT AND BACKGROUND

## Country level

The collapse of the Soviet Union brought with it the dismantlement of collective farms and privatization of the agricultural land. Gradual deterioration of the existing infrastructure and assets, as well as the inability of farmers to profitably cultivate small fragmented land plots, led to a situation, where, according to official estimates, by 2018, over 45% of the arable land in Armenia (about 243,000 hectares) was not cultivated.

Moreover, a significant portion of hay meadows and pastures is not being utilized due to lack of proper road access and pastoral infrastructure, leading to overgrazing and degrading of accessible nearby grasslands, as well as to using private arable land as pastures.

The need to tackle these issues is reflected in the "Concept and action plan on promoting the effective use of agricultural land" drafted by the Ministry of Economy and approved by the government in early 2020.[1] Since then, the situation has drastically deteriorated due to the impacts of the COVID-19 pandemic, and the second Nagorno-Karabakh war, the severe draughts of the past two years in Gegharkunik, Shirak and Vayots Dzor putting even more strain on the already dire socio-economic conditions of rural smallholders.

The population of Gegharkunik, Shirak and Lori had the highest rates of labor migration for the past two decades, and the rural families have long been sustaining their livelihoods largely thanks to remittances from seasonal labor migrants. COVID-19 pandemic made labor migration nearly impossible in 2020, and quite challenging in 2021 as well. This meant that financial means to cover the costs of agricultural activities became much more limited.

On the other hand, due to the post-war realities, settlements at the border of Armenia and Azerbaijan (particularly Vardenis region of Gegharkunik) lost access to pastures and hay meadows they used to utilize for the past 25 years. This, coupled with the severe draughts, resulted in drastic deficit of fodder, and subsequent reduction of livestock, a trend that continues to date.

## Marz level

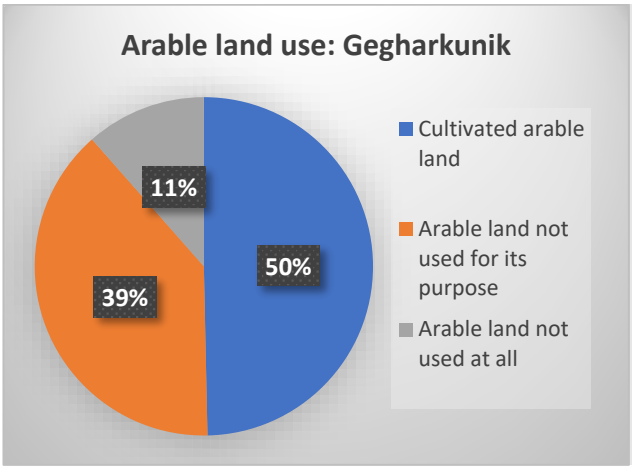
The following section of this chapter reflects the data and estimates provided by marzpetaran officials in response to the questionnaire sent out to them, as a follow-up to the Project initiation meetings held with them by Shen and GIZ. As a general note, the Project was very well received by the officials in all three marzes, due to its relevance to the regional needs.

[1] Concept and action plan on promoting the effective use of agricultural land, approved by Government decree N 68-L, dated 23 January, 2020.

## GEGHARKUNIK

*Arable land*

| | |
|---|---|
| **Total arable land (hectares)** | 81,449 |
| **Cultivated arable land** | 40,445 |
| **Arable land not used for its purpose** | 31,643 |
| **Arable land not used at all** | 9,361 |
| **Reasons for not cultivating the arable land**<br>• Small, fragmented land plots make their management not feasible<br>• Lack of irrigation<br>• Lack of agricultural machinery, and the dilapidated state of the existing machinery | |

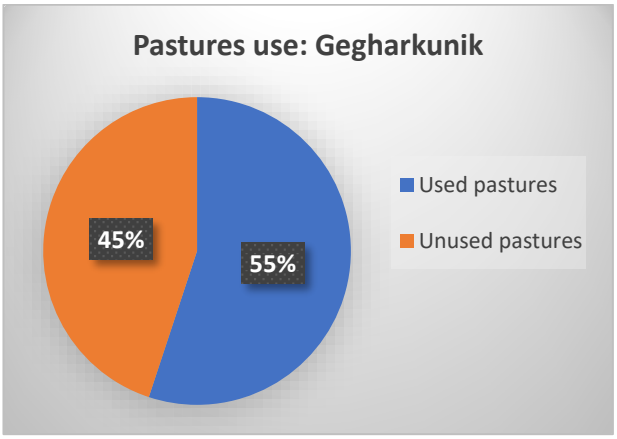



To increase the use of arable land in Gegharkunik, the marz officials find it necessary to focus on the following measures:

- Enlargement of farms
- Acceleration of land consolidation process (employing both voluntary and mandatory mechanisms)
- Inventorying the agricultural land, and conducting a land assessment using a new methodology

*Pastures*

| | |
|---|---|
| **Total pastures (hectares)** | 181,561 |
| **Used pastures** | 100,000 |
| **Unused pastures** | 81,561 |
| **Reasons for not using the pastures**<br>• Bordering Azerbaijan (unsafe)<br>• Lack of roads<br>• Discrepancies between the livestock count and pasture area allocated to each community | |

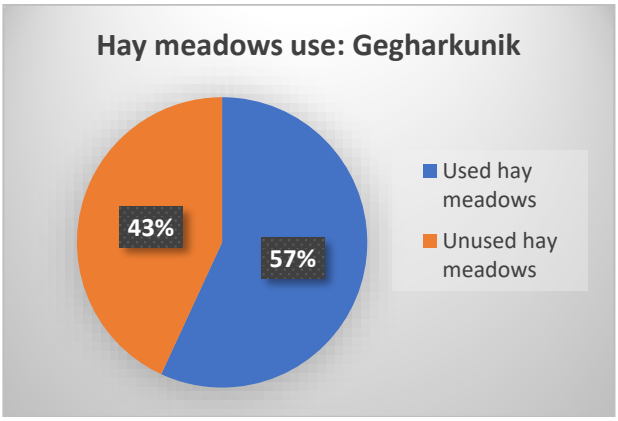



To improve the effectiveness of pasture use, the marz officials see the need to undertake the following main measures:

- Increasing the level of security at the state border
- Rehabilitating the roads leading to pastures
- Providing support to farmers to increase the headcount of livestock

*Hay meadows*

| | |
|---|---|
| **Total hay meadows (hectares)** | 35,658 |
| **Used hay meadows** | 20,284 |
| **Unused hay meadows** | 15,374 |
| **Reasons for not using the hay meadows**<br>• Distance from the settlements (40-60km)<br>• Bad condition of roads<br>• High cost of harvesting grass | |



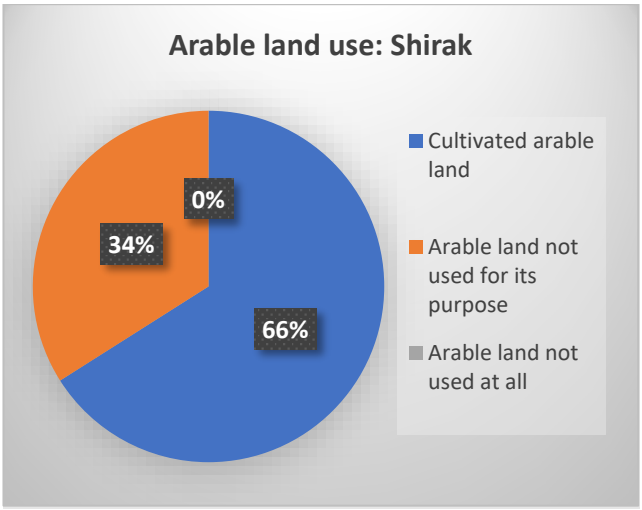

*Animal husbandry*

According to marzpetaran data, the total headcount of cattle in Gegharkunik is 103,019; small ruminants – 105,490.

## SHIRAK

*Arable land*

| | |
|---|---|
| **Total arable land (hectares)** | 78,143 |
| **Cultivated arable land** | 51,581 |
| **Arable land not used for its purpose** | 26,562 |
| **Arable land not used at all** | -* |
| **Reasons for not cultivating the arable land**<br>• Large portion of land located in highlands, on rocky slopes, and is degraded after prolonged non-use<br>• Lack of irrigation<br>• Lack of agricultural machinery<br>• Lack of human resources | |




* While marzpetaran representatives did not provide an estimate, according to the data retrieved from the Ministry of Territorial Administration and Development (http://mtad.am/hy/ayl/), about 1615 hectares of arable land in Shirak were not used at all as of 1 January, 2020.

To increase the use of arable land in Shirak, the marz officials find it necessary to focus on the following:

- Implementation of effective agrotechnical measures, such as twice yearly ploughing
- Improvement of irrigation infrastructures
- Updating and enlarging the agricultural machinery park
- Ensuring the availability of agriculture support programs

*Pastures*

The total area of Shirak's pastures is 112,065. The marzpetaran officials were unable to provide estimates for used and unused pastures. They did, however, elaborate on the reasons why a portion of the pastures was not used, and these reasons were:

- Being located on steep slopes
- Being located inside engineering structures at the Armenian-Turkish border
- Distant pastures not having animal water points

To increase the effectiveness of pasture use, the marzpetaran believes it is necessary to rehabilitate and improve the accessible (used) degraded pastures, as well as undertake measures to ensure irrigation of the pastures.

*Hay meadows*

According to the data provided by marzpetaran, Shirak has 9,832 hectares of hay meadows, all of which are being used.

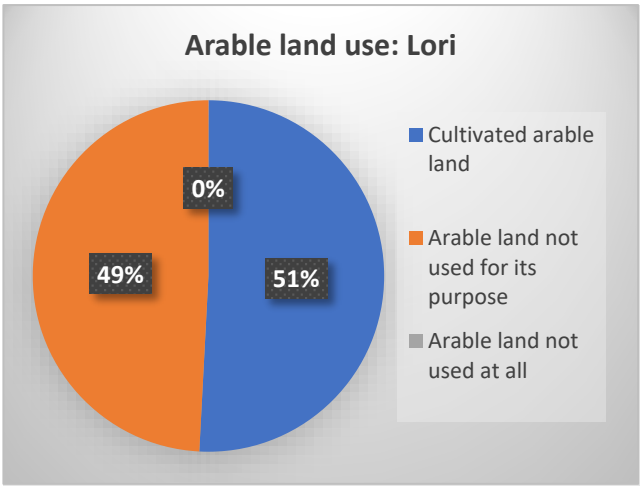
*Animal husbandry*

The total headcount of cattle in Shirak is 90,879; small ruminants – 74,986.

## LORI

*Arable land*

| | |
|---|---|
| **Total arable land (hectares)** | 42,014 |
| **Cultivated arable land** | 21,356 |
| **Arable land not used for its purpose** | 20,658 |
| **Arable land not used at all** | - * |
| **Reasons for not cultivating the arable land**<br>• Fragmented land plots<br>• Land owners not living in the communities or not engaging in agriculture<br>• Lack of irrigation<br>• Lack of knowledge and technologies to profitably engage in horticulture | |




* While marzpetaran representatives did not provide an estimate, according to the data retrieved from the Ministry of Territorial Administration and Development (http://mtad.am/hy/ayl/), about 4715 hectares of arable land in Lori were not used at all as of 1 January, 2020.

To increase the use of arable land, marzpetaran deems the following measures necessary:

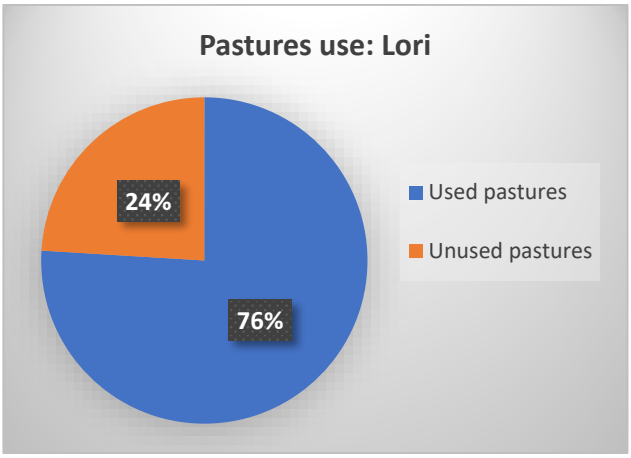
- Consolidation of fragmented land plots
- Penalties for not cultivating the land (land owners keep ownership, but rights to use the land may be transferred to another party)
- Attraction and engagement of agriculture professionals to work in the communities

*Pastures*

| | |
|---|---|
| **Total pastures (hectares)** | 145,633 |
| **Used pastures** | 110,633 |
| **Unused pastures** | 35,000 |

**Reasons for not using the pastures**

- Roads to pastures are in very bad condition
- Bad pasture management practices
- Pasture degradation
- Lack of water points in pastures




To improve the effectiveness of pasture use, the marz officials see the need to undertake the following main measures:

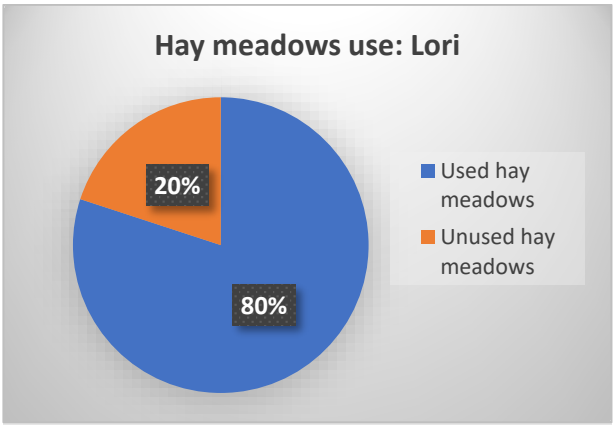
- Rehabilitation of roads leading to pastures
- Proper pasture management with involvement of experts
- Improvement of degraded pastures
- Water points construction in pastures

*Hay meadows*

| | |
|---|---|
| **Total hay meadows (hectares)** | 35,061 |
| **Used hay meadows** | 28,061 |
| **Unused hay meadows** | 7,000 |

**Reasons for not using the hay meadows**

- Location inaccessible for mowing machinery
- Fodder produced on arable lands
- Degradation of meadows




*Animal husbandry*

According to the data provided by the marzpetaran, the total headcount of cattle in Lori is 74,674; small ruminants – 26,306.


# GANDZAK

| | |
|---|---|
| Total population | 4334 |
| Total number of households (HHs) | 1362 |
| Number of HHs who had member(s) leaving Armenia to work abroad in 2021 | 18% 250 |
| Number of HHs who had member(s) leaving the community to work elsewhere in Armenia in 2021 | 7% 100 |
| Number of displaced families from Artsakh that were resettled in the community in 2020-2021 | 2 |
| Number of HHs having 1-3 hectares of arable land | 135 |

## LAND USE

| | | |
|---|---|---|
| 246 | Total area of hay **meadows** in the community (hectares) | |
| 48 | Unused hay **meadows** (hectares) | 19% |
| 913 | Total area of **arable land** in the community (hectares) | |
| 178 | **Arable land** not used for its purpose (hectares) | 19% |
| 36 | **Arable land** not used at all (hectares) | 4% |
| 1451 | Total area of community **pastures** (hectares) | |
| 1050 | Unused **pastures** (hectares) | 72% |

## ANIMAL HUSBANDRY

| | |
|---|---|
| 262 | Number of **households** engaged in animal husbandry (cattle and/or small ruminants) |
| 1427 | Total headcount of **cattle** in the community |
| 531 | Total headcount of small ruminants in the community |
| cattle 3 ruminants 2 | Number of **herds** that leave the community |
| 50% | Volume of locally sourced **fodder** as percent of overall fodder demand, 2020-2021 |
| 100 to 120 | Avg. annual volume of fodder required per one cattle, bales |
| 1800 to 2000 | Price of 1 bale of fodder, AMD, 2021 |

## COMMUNITY RESOURCES

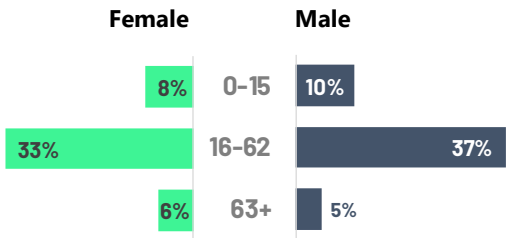
### Available agricultural machinery

| 15 | 11 | 28 | 9 |
|---|---|---|---|
| Grass Mowers | Balers | Tractors | Line-Sowers |

### Available human capital

| 0 | 1 | 35 | 42 |
|---|---|---|---|
| Agronomists | Veterinarians | Agriculture Machinists | Mechanists |

### Gender-age distribution of population




### Existing cooperatives

"Pasture Users Cooperative"; inactive

### Previous relevant rehabilitation projects

Pasture improvement project, CARMAC

### Seasonal workforce daily rates AMD5000-8000

## Reasons for not using the land

*Arable land*

As per the records of the Community Hall, 214 hectares (or 23%) of Gandzak's arable land is not cultivated. Of these, 36 hectares are not used at all, while 178 hectares are used as grasslands and pastures. Among reasons for not cultivating the land, the following have been brought up:

- The uncultivated arable land is located far from the community, mostly in the third zone
- Most of the land plots owned by the farmers are small and allocated in different zones, hence cultivation is costly and inefficient
- The soil is eroded, and the yield is low
- Farmers don't have access to soil analysis to inform cultivation process
- Overall, the profitability of agriculture is low and the sales of produce is difficult. Investing in cultivation of more land is not justified.

*Pastures*

As per the collected data, 1050 hectares (72%) of Gandzak's pastures are not used. As a result, 1427 cattle and 531 small ruminants graze on just over 400 hectares of pastures and about 180 hectares of unused arable land.

Among reasons for not using over 70% of the pastures, community members referred to the following:

- Pastures are located far from the community (25+ km)
- Roads leading to these pastures are very bad or non-existent
- Shortage of workforce (pastorals)
- Using these pastures is financially unjustified

*Hay meadows*

According to the survey, the reasons for not using 48 hectares (19%) of community's hay meadows are:

- Degradation of the soil and subsequently low yield of grass
- These hay meadows are located far from the community, therefore cattle from nearby villages grazes on them before farmers can harvest the grass

## Fodder provision issues

Gandzak farmers do not cultivate fodder crops due to lack of appropriate land plots. Instead, they rely on harvesting natural grass. This only supplied about 50% of the required fodder in 2020-2021. With draughts affecting all of Gegharkunik region, 60-70% of the deficit was procured from other marzes.

Gandzak farmers note fodder prices rising from 800-1000 AMD to 1800-2000 AMD per bale in the past three years, and claim that due to fodder supply issues the livestock heads have been reduced by 40%.

Gandzak did not previously use (or buy fodder from) the grasslands and pastures in Karvachar, hence the fodder supply was not affected in this regard.

### Needs with respect to fodder production and pasture improvement

As per the assessment of community leaders and farmers, Gandzak's most important needs in terms of pasture improvement and fodder production are:

- Irrigation network
- Fertilizers at an affordable price
- Pasture improvement in an area called "Boghaz"

### Seasonal workforce availability

Local population comprises about 80% of Gandzak's seasonal workforce. The shortage of roughly 20% is overcome by engaging seasonal workers from other marzes of Armenia. Seasonal workforce mostly provides services of grass and potato harvesting.

Women are highly involved in all agricultural activities. There are no women groups specialized in wild collection, however some women individually engage in wild collection (mostly rosehips and sorrel).

### Relevance of the Project to community needs and readiness to contribute

Gandzak community leaders and farmers find both pasture improvement and arable land improvement components of the Project relevant to their needs, and are ready to provide the required contribution.

Some of the specific comments and requests in this regard were:

- Most of the unused arable land plots are small (less than 1 hectare), but given such opportunity, owners of neighboring land plots could apply to the Project jointly
- It would help if the pasture improvement component could be implemented on the community's hay meadows


# SARUKHAN

| | |
|---|---|
| Total population | 7487 |
| Total number of households (HHs) | 2900 |
| Number of HHs who had HH member(s) leaving Armenia to work abroad in 2021 | 21% 600 |
| Number of HHs who had HH member(s) leaving the community to work elsewhere in Armenia in 2021 | 10% 300 |
| Number of displaced families from Artsakh that were resettled in the community in 2020-2021 | 1 |
| Number of households having 1-3 hectares of arable land | 5-10% |

## LAND USE

| | | |
|---|---|---|
| 437 | Total area of hay **meadows** in the community (hectares) | |
| 0 | Unused hay **meadows** (hectares) | 0% |
| 924 | Total area of **arable land** in the community (hectares) | |
| 500 | **Arable land** not used for its purpose (hectares) | 54% |
| 0 | **Arable land** not used at all (hectares) | 0% |
| 3810 | Total area of community **pastures** (hectares) | |
| 2000 | Unused **pastures** (hectares) | 52% |

## ANIMAL HUSBANDRY

| | |
|---|---|
| 300 | Number of **households** engaged in animal husbandry (cattle and/or small ruminants) |
| 1266 | Total headcount of cattle in the community |
| 380 | Total headcount of small ruminants in the community |
| cattle 4 | Number of herds that leave the community |
| 30% | Volume of locally sourced fodder as percent of overall fodder demand, 2020-2021 |
| 100 to 120 | Avg. annual volume of fodder required per one cattle, bales |
| 2000 to 2200 | Price of 1 bale of fodder, AMD, 2021 |

## COMMUNITY RESOURCES

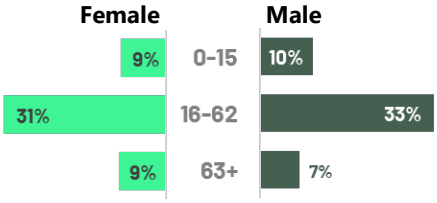
### Available Agricultural Machinery

| | | | |
|---|---|---|---|
| 10 Grass Mowers | 10 Ploughs | 10 Tractors | 3 Line-Sowers |
| 4 Balers | 1 Sprayer | 2 Combines | |

### Available Human Capital

| | | | |
|---|---|---|---|
| 1 Agronomists | 1 Veterinarians | 20 Agriculture Machinists | 15 Mechanists |

### Gender-age distribution of population




### Existing cooperatives

"Pasture Users Cooperative"; active

### Previous relevant rehabilitation projects

Implemented 15-20 years ago (likely CARMAC)

### Seasonal workforce daily rates AMD 5000-7000

## Reasons for not using the land

*Arable land*

As per the records of the Community Hall, 500 hectares (or 54%) of Sarukhan's arable land is not cultivated, all of it, instead, being used as natural grassland. Among reasons for not cultivating the land, the following have been brought up:

- The uncultivated land is comprised of small land plots (mostly 0.15 hectares) owned by different farmers, therefore agricultural machinery cannot work on it effectively
- Due to prolonged non-use, the land has hardened, and the available machinery cannot loosen it
- Fuel is expensive
- These land plots are not irrigated

*Pastures*

As per the collected data, 2000 hectares (52%) of Sarukhan's pastures are not used. Among reasons for not using the majority of the pastures, community members referred to the following:

- Pastures are located far from the community (20-25 km)
- Roads leading to these pastures are very bad or non-existent
- Pastures are degraded and vegetation is very sparse

*Hay meadows*

According to the survey, Sarukhan farmers use all of the community's hay meadows (437 hectares), additionally, as mentioned above, harvesting grass from uncultivated arable land.

## Fodder provision issues

Sarukhan farmers mostly rely on natural grass harvested from the community, with only small amounts of alfalfa and sainfoin produced locally. According to the farmers, this is due to increased prices for fodder seeds; as per the farmers' reports, sainfoin seeds, for example, have increased from 360 AMD to 600-700 AMD in just over a year.

With the existing fodder generation practices, Sarukhan farmers are usually able to source about 60% of the required fodder from the community; however, in 2020-2021, due to draught, the self-sufficiency level dropped to only about 30%. The deficit was mostly procured from other marzes (30% from Gegharkunik vs. 70% from other marzes).

Sarukhan farmers used to procure grass from Karvachar in the past (covering about 40% of the usual deficit), hence their fodder supply chain was significantly affected by the outcomes of the 2020 war.

Due to all these factors, Sarukhan farmers note fodder prices rising from 800-1000 AMD to 2000-2000 AMD per bale in the past three years, and claim that due to fodder supply issues

on one hand, and low prices on raw produce on the other, engaging in animal husbandry has become increasingly unprofitable. Subsequently, the livestock heads in Sarukhan have been reduced by over 40% in just 2021.

### Needs with respect to fodder production and pasture improvement

As per the assessment of community leaders and farmers, Sarukhan's most important needs in terms of pasture improvement and fodder production are:

- Affordable agricultural machinery
- Fodder seeds
- Fertilizers
- Pasture improvement in nearby areas (up to 10 km from the community)

### Seasonal workforce availability

Sarukhan does not have shortages of seasonal workforce, all types of agricultural services can be sourced locally.

Women are involved in all types of agricultural activities. There are no women groups specialized in wild collection, however some women individually engage in wild collection to provide for household needs.

### Relevance of the Project to community needs and readiness to contribute

Sarukhan community leaders and farmers find both pasture improvement and arable land improvement components of the Project relevant to their needs, and are ready to provide the required contribution.

A specific comment in this regard was:

- Most of the unused arable land plots are small (0.15 hectare), but given such opportunity, owners of neighboring land plots would be willing to join efforts


# LANJAGHBYUR

| | |
|---|---|
| Total population | 2640 |
| Total number of households | 739 |
| Number of HHs who had HH member(s) leaving Armenia to work abroad in 2021 | 88% 650 |
| Number of HHs who had HH member(s) leaving the community to work elsewhere in Armenia in 2021 | 13.5% 100 |
| Number of displaced families from Artsakh that were resettled in the community in 2020-2021 | 0 |
| Number of households having 1-3 hectares of arable land | 400 |

## LAND USE

| | | |
|---|---|---|
| 460 | Total area of hay **meadows** in the community (hectares) | |
| 200 | Unused hay **meadows** (hectares) | 43% |
| 607 | Total area of **arable land** in the community (hectares) | |
| 405 | **Arable land** not used for its purpose (hectares) | 67% |
| 55 | **Arable land** not used at all (hectares) | 9% |
| 1427 | Total area of community **pastures** (hectares) | |
| 1067 | Unused **pastures** (hectares) | 75% |

## ANIMAL HUSBANDRY

| | |
|---|---|
| 512 | Number of **households** engaged in animal husbandry (cattle and/or small ruminants) |
| 812 | Total headcount of cattle in the community |
| 1157 | Total headcount of small ruminants in the community |
| cattle 4 ruminants 3 | Number of herds that leave the community |
| 30% | Volume of locally sourced fodder as percent of overall fodder demand, 2020-2021 |
| 100 | Avg. annual volume of fodder required per one cattle, bales |
| 2000 | Price of 1 bale of fodder, AMD, 2021 |

## COMMUNITY RESOURCES

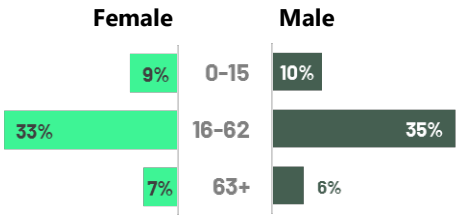
### Available Agricultural Machinery

| 15 | 3 | 11 | 1 |
|---|---|---|---|
| Grass Mowers | Balers | Tractors | Line-Sower |

### Available Human Capital

| 5 | 2 | 30 | 28 |
|---|---|---|---|
| Agronomists | Veterinarians | Agriculture Machinists | Mechanists |

### Gender-age distribution of population




### Existing cooperatives

"Pasture Users Cooperative"; active

### Previous relevant rehabilitation projects

Pasture watering (8km pipeline, 4 water points) and pasture road improvement

### Seasonal workforce daily rates AMD5000-10000

## Reasons for not using the land

*Arable land*

As per the records of the Community Hall, 460 hectares (or 76%) of Lanjaghbyur's arable land is not cultivated. Of these, 55 hectares are not used at all, while 405 hectares are used as pastures. Among reasons for not cultivating the land, the following have been brought up:

- Most of the uncultivated arable lands are located far from the community (10km), and the roads are in very bad condition
- Most of these land plots are small (0.3 hectares), hence cultivation is inefficient
- These land plots haven't been cultivated for 20 years, and the community lacks appropriate machinery to revive it
- Pesticides and fertilizers are expensive
- No access to irrigation network

The participants also noted that in Soviet times grain crops were successfully cultivated on this land. Also, there are water reservoirs preserved from the past, which can be used to rehabilitate the irrigation network.

*Pastures*

As per the collected data, 1067 hectares (75%) of Lanjaghbyur's pastures are not used. As a result, 812 cattle and 1157 small ruminants graze on just 360 hectares of pastures and 405 hectares of unused arable land.

Among reasons for not using three quarters of the pastures, community members referred to the following:

- Pastures are located far from the community (10-20 km) and roads are in very bad condition
- 250 hectares of these pastures are located in between plots of arable land, hence animals cannot be allowed to graze there
- Pastures have degraded over time
- Animal husbandry is not profitable; hence the livestock heads are decreasing and some of the pastures are left idle

*Hay meadows*

According to the survey, the reasons for not using 200 hectares (43%) of the community's hay meadows are:

- Degradation (erosion) of the soil and low yield of grass
- Coupled with high costs of harvesting, this makes using the hay meadows ineffective

### Fodder provision issues

Lanjaghbyur farmers do not cultivate fodder crops and, instead, rely on harvesting natural grass. This usually only supplies about 50% of the required fodder, while in 2020-2021, just about 30%. With draughts affecting all of Gegharkunik region, most of the deficit (80-90%) was procured from other marzes. Even so, one large farmer claimed that being unable to procure enough fodder in Armenia, he had to import fodder from Russia.

Lanjaghbyur farmers note fodder prices rising from 800 AMD to 2000 AMD per bale in the past three years, and state that due to fodder supply issues the livestock heads have been reduced by over 30%.

Lanjaghbyur did not previously use (or buy fodder from) the grasslands and pastures in Karvachar, hence the fodder supply was not affected in this regard.

### Needs with respect to fodder production and pasture improvement

As per the assessment of community leaders and farmers, Lanjaghbyur's most important needs in terms of pasture improvement and fodder production are:

- Sainfoin and alfalfa seeds
- Fertilizers
- Appropriate agricultural machinery
- Removal of rocks caused by melioration
- Improvement of roads
- Pasture improvement in areas called "Manichar" and "Sari koghm"

### Seasonal workforce availability

Due to labor migration rates, Lanjaghbyur faces seasonal workforce shortages, about 50% of workforce customarily being recruited from nearby settlements.

Women are involved in all agricultural activities. Wild collection is not practiced.

### Relevance of the Project to community needs and readiness to contribute

Lanjaghbyur community leaders and farmers find both pasture improvement and arable land improvement components of the Project relevant to their needs, and are ready to provide the required contribution. No reservations or limitations have been explicitly shared.


# TSAGHKASHEN

| | |
|---|---|
| Total population | 537 |
| Total number of households (HHs) | 136 |
| Number of HHs who had HH member(s) leaving Armenia to work abroad in 2021 | 73.5% 100 |
| Number of HHs who had HH member(s) leaving the community to work elsewhere in Armenia in 2021 | 13% 18 |
| Number of displaced families from Artsakh that were resettled in the community in 2020-2021 | 1 |
| Number of households having 1-3 hectares of arable land | 122 |

## LAND USE

| | | |
|---|---|---|
| 122 | Total area of hay **meadows** in the community (hectares) | |
| 92 | Unused hay **meadows** (hectares) | 75% |
| 362 | Total area of **arable land** in the community (hectares) | |
| 236 | **Arable land** not used for its purpose (hectares) | 65% |
| 0 | **Arable land** not used at all (hectares) | 0% |
| 380 | Total area of community **pastures** (hectares) | |
| 0 | Unused **pastures** (hectares) | 0% |

## ANIMAL HUSBANDRY

| | |
|---|---|
| 58 | Number of **households** engaged in animal husbandry (cattle and/or small ruminants) |
| 217 | Total headcount of cattle in the community |
| 70 | Total headcount of small ruminants in the community |
| 2 | Number of herds that leave the community |
| 30% | Volume of locally sourced fodder as percent of overall fodder demand, 2020-2021 |
| 80 to 120 | Avg. annual volume of fodder required per one cattle, bales |
| 2200 | Price of 1 bale of fodder, AMD, 2021 |

## COMMUNITY RESOURCES

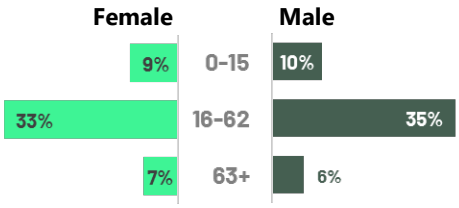
### Available Agricultural Machinery

| | | |
|---|---|---|
| 30 Grass Mowers | 3 Balers | 8 Tractors |
| 2 Line-Sowers | 5 Ploughs | 2 Combines |

### Available Human Capital

| | | |
|---|---|---|
| 1 Veterinarians | 20 Agriculture Machinists | 15 Mechanists |

### Gender-age distribution of population




### Existing cooperatives

None

### Previous relevant rehabilitation projects

Pasture irrigation project in 2016

### Seasonal workforce daily rates AMD 7000-10000

## Reasons for not using the land

*Arable land*

As per the records of the Community Hall, 236 hectares (or 65%) of Tsaghkashen's arable land is not cultivated, and, instead, used as grasslands and pastures. Among reasons for not cultivating the land, the following have been brought up:

- The land is not irrigated
- Due to prolonged non-use, the soil degraded, and the yield is low
- Profitability is low

*Pastures*

As per the collected data, all of Tsaghkashen's pastures (380) are used by 217 cattle and 70 small ruminants.

*Hay meadows*

On the other hand, the community only uses 25% of its 122 hectares of hay meadows. According to the survey, the reasons for not using the remaining 92 hectares (75%) of community's hay meadows are:

- The area is very rocky and located in between mountains
- Some of it is used as pasture

## Fodder provision issues

For fodder, Tsaghkashen farmers cultivate sainfoin, as well as harvest natural grass and byproducts of wheat cultivation (straw). Usually, this allows them to meet about 90% of the local demand; however, in 2020-2021, due to draughts, they were only able to locally source/harvest 30% of the required fodder. With draughts affecting all of Gegharkunik region, about 70% of the deficit was procured from other marzes, mainly from Ararat.

Tsaghkashen farmers note fodder prices rising from 1000 AMD to 2200 AMD per bale in the past three years, putting a significant strain on the smallholders.

Tsaghkashen did not previously use (or buy fodder from) the grasslands and pastures in Karvachar, hence the fodder supply was not affected in this regard.

## Needs with respect to fodder production and pasture improvement

As per the assessment of community leaders and farmers, Tsaghkashen's most important needs in terms of pasture improvement and fodder production are:

- Sainfoin, barley, wheat seeds
- Fertilizers to improve the soil
- Fuel for agricultural machinery

- Sowing and ploughing machinery (the available machinery is outdated)
- Anti-hail station
- Water points in pastures

### Seasonal workforce availability

Even though according to data provided by the Community Hall, about three quarters of Tsaghkashen's 136 households are involved in labor migration, the focus group participants claimed they only rely on local seasonal workforce for sowing, plowing, harvesting and shepherding.

Women are highly involved in all agricultural activities. There are also women groups (as well as individuals) engaging in wild collection of sorrel, lilies and rosehips.

### Relevance of the Project to community needs and readiness to contribute

Tsaghkashen community leaders and farmers find both pasture improvement and arable land improvement components of the Project relevant to their needs, and are ready to provide the required contribution. No specific reservations were expressed. Unlike many other surveyed communities of Gegharkunik, land plots in Tsaghkashen are relatively large, the majority of the families having over 1 hectare of arable land.


# MADINA

| | |
|---|---|
| Total population | 1098 |
| Total number of households | 285 |
| Number of HHs who had HH member(s) leaving Armenia to work abroad in 2021 | 49% 140 |
| Number of HHs who had HH member(s) leaving the community to work elsewhere in Armenia in 2021 | 2% 5 |
| Number of displaced families from Artsakh that were resettled in the community in 2020-2021 | 0 |
| Number of households having 1-3 hectares of arable land | 160 |

## LAND USE

| | | |
|---|---|---|
| 365 | Total area of hay **meadows** in the community (hectares) | |
| 5 | Unused hay **meadows** (hectares) | 1.4% |
| 580 | Total area of **arable land** in the community (hectares) | |
| 350 | **Arable land** not used for its purpose (hectares) | 60% |
| 40 | **Arable land** not used at all (hectares) | 7% |
| 380 | Total area of community **pastures** (hectares) | |
| 0 | Unused **pastures** (hectares) | 0% |

## ANIMAL HUSBANDRY

| | |
|---|---|
| 210 | Number of **households** engaged in animal husbandry (cattle and/or small ruminants) |
| 1157 | Total headcount of cattle in the community |
| 1587 | Total headcount of small ruminants in the community |
| cattle 3 ruminants 4 | Number of herds that leave the community |
| 20% | Volume of locally sourced fodder as percent of overall fodder demand, 2020-2021 |
| 90 to 100 | Avg. annual volume of fodder required per one cattle, bales |
| 2000 to 2500 | Price of 1 bale of fodder, AMD, 2021 |

## COMMUNITY RESOURCES

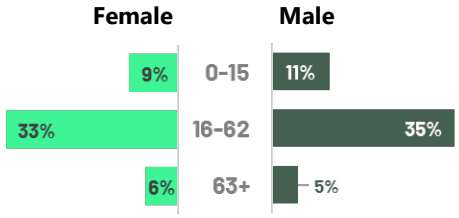
### Available Agricultural Machinery

| 12 | 4 | 3 |
|---|---|---|
| Grass Mowers | Balers | Tractors |

### Available Human Capital

| 2 | 1 | 30 |
|---|---|---|
| Agronomists | Veterinarians | Mechanists |

### Gender-age distribution of population




### Existing cooperatives

"Pasture users cooperative", active

### Previous relevant rehabilitation projects

None

### Seasonal workforce daily rates AMD 5000-10000

## Reasons for not using the land

*Arable land*

As per the records of the Community Hall, 390 hectares (or 67%) of Madina's arable land is not cultivated. Of these, 40 hectares are not used at all, while 350 hectares are used as grasslands and pastures. Among reasons for not cultivating the land, the following have been brought up:

- The main agricultural activity in the community is animal husbandry (mostly for cheese production), so the land is used to sustain the animals (graze, then harvest the grass for winter)
- Horticulture is costly and only the irrigated homesteads (about 90 hectares) are used for potato production
- Many arable land owners do no live in the community

*Pastures and Hay meadows*

As per the collected data, all of Madina's pastures and all but 5 hectares of hay meadows are being used (the latter not used because owners are away). Considering the small population of the community, the livestock count is rather large (1157 cattle and 1587 small ruminants), which may imply overgrazing of just 380 hectares of pastures, even with the additional 350 hectares of arable land used as such. The community members, however, did not point this out as an issue at any point during the focus group, or bring this up in the community questionnaire.

## Fodder provision issues

Even though Madina is primarily engaged in animal husbandry, farmers do not cultivate any fodder crops, relying solely on harvesting natural grass. This is rather puzzling, considering the only solid argument against cultivating the land (see above) was that cultivation is costly. When the main agricultural income of the community comes from animal husbandry, and prices for fodder are high, it would seem natural to invest in fodder production, thus trying to cut future costs and increase profits.

This becomes more of an issue when, as per the farmers' own estimates, even in no-draught years they are only able to supply about 50-60% of the required fodder (just 20% in 2020-2021), the deficit mostly overcame by procuring fodder from other communities in Gegharkunik (80%) and other marzes (20%, mostly Ararat).

Madina farmers note fodder prices rising from 1000-1500 AMD to 2000-2500 AMD per bale in the past three years, and claim that due to fodder supply issues the livestock heads have been reduced by 30-40%.

Madina used to procure about 30% of the fodder from Karvachar, hence their fodder supply was also negatively affected by the outcomes of the 2020 war.

### Needs with respect to fodder production and pasture improvement

As per the assessment of community leaders and farmers, Madina's most important needs in terms of pasture improvement and fodder production are:

- Sainfoin and alfalfa seeds
- Fertilizers
- Fuel
- Appropriate agricultural machinery (the cooperative does not own ploughing machinery)

### Seasonal workforce availability

Even though roughly half of Madina's households are engaged in labor migration, the focus groups participants claimed there is seasonal workforce available in the community for all kinds of agricultural activities.

Women are involved in all agricultural activities. There are no women groups specialized in wild collection, however a few women individually engage in wild collection (mostly sea buckthorns, sorrel and lilies).

### Relevance of the Project to community needs and readiness to contribute

Madina administration said the community is not ready to contribute to the pasture improvement component of the project.

Farmers, on the other hand, seemed interested in the arable land component, and the Project appears very relevant to the specifics of the community: highly focused on animal husbandry, average size of uncultivated land plots – 1.15 hectares. At the same time, only 4 farmers participated in the focus group (when in the overwhelming majority of the other communities, the participation was much wider), and the initial communication with the community administration (by Shen regional representative) was not indicative of much interest in the Project.


# NERKIN GETASHEN

| | |
|---|---|
| Total population | 9155 |
| Total number of households (HHs) | 2482 |
| Number of HHs who had HH member(s) leaving Armenia to work abroad in 2021 | 64.5% 1600 |
| Number of HHs who had HH member(s) leaving the community to work elsewhere in Armenia in 2021 | 2.4% 60 |
| Number of displaced families from Artsakh that were resettled in the community in 2020-2021 | 1 |
| Number of households having 1-3 hectares of arable land | 0 |

## LAND USE

| | | |
|---|---|---|
| 14 | Total area of hay **meadows** in the community (hectares) | |
| 0 | Unused hay **meadows** (hectares) | 0% |
| 536 | Total area of **arable land** in the community (hectares) | |
| 300 | **Arable land** not used for its purpose (hectares) | 56% |
| 20 | **Arable land** not used at all (hectares) | 4% |
| 470 | Total area of community **pastures** (hectares) | |
| 0 | Unused **pastures** (hectares) | 0% |

## ANIMAL HUSBANDRY

| | |
|---|---|
| 1196 | Number of **households** engaged in animal husbandry (cattle and/or small ruminants) |
| 1850 | Total headcount of cattle in the community |
| 200 | Total headcount of small ruminants in the community |
| cattle 3 | Number of herds that leave the community |
| 30-40% | Volume of locally sourced fodder as percent of overall fodder demand, 2020-2021 |
| 120 | Avg. annual volume of fodder required per one cattle, bales |
| 2000-2500 | Price of 1 bale of fodder, AMD, 2021 |

## COMMUNITY RESOURCES

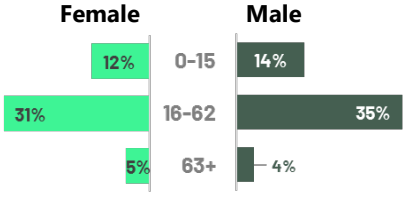
### Available Agricultural Machinery

| | | |
|---|---|---|
| 15 Grass Mowers | 11 Balers | 37 Tractors |
| 2 Line-Sowers | 25 Ploughs | 5 Combines |

### Available Human Capital

| | |
|---|---|
| 3 Agronomists | 2 Veterinarians |

### Gender-age distribution of population




### Existing cooperatives

"Pasture users cooperative", inactive

### Previous relevant rehabilitation projects

Arable land improvement; pasture water points

### Seasonal workforce daily rates AMD5000-6000

## Reasons for not using the land

*Arable land*

As per the records of the Community Hall, 320 hectares (or 60%) of Nerkin Getashen's arable land is not cultivated. Of these, 20 hectares are not used at all, while 300 hectares are used as grasslands and pastures. Among reasons for not cultivating the land, the following have been brought up:

- These are small land plots (0.2-0.3 hectares), therefore cultivation is unprofitable
- Except homesteads, the rest of the arable land is not irrigated
- The overall yield is low, because the soil is degraded and haven't been fertilized in a long time
- Fertilizers are expensive, plus the farmers don't have the knowledge to choose the right fertilizers
- Some of the land owners don't live in Armenia

*Pastures and hay meadows*

As per the collected data, all of Nerkin Getashen's pastures and hay meadows are being used. Still, farmers find the allocated pasture area highly inadequate, considering their livestock count.

## Fodder provision issues

Nerkin Getashen farmers note, that 10-15 years ago they received state assistance to plant alfalfa and sainfoin. They harvested this for 5-6 years, but did not resow the fields after that, so they turned into natural grasslands.

Currently, farmers do not cultivate any fodder crops, rather relying on harvesting natural grass from the hay meadows and uncultivated arable land. With draughts, this only supplied about 30-40% of the required fodder in 2020-2021. About 70% of the resulting deficit was overcome by procuring fodder from other marzes, mostly from Ararat and Tavush (remaining 30% procured from Gegharkunik). Nerkin Getashen previously used to procure about 50% of the fodder from Al Lcher, which became impossible due to post-war realities.

Nerkin Getashen farmers note fodder prices rising from 1000-1200 AMD to 2200-2500 AMD per bale in the past three years, and claim that due to fodder supply issues the livestock heads have been reduced by 30%, with further 50% reduction bound to happen until the end of 2021. As per the farmers' words, "one kilogram of meat now costs as much as one bale of fodder", so animal husbandry is not justified as an income generation activity any longer.

### Needs with respect to fodder production and pasture improvement

As per the assessment of community leaders and farmers, Nerkin Getashen's most important needs in terms of pasture improvement and fodder production are:

- Sainfoin and alfalfa seeds
- Assistance in plowing activities (both financial and by way of providing agricultural machinery and fuel), which are the most costly

### Seasonal workforce availability

Being one of the largest rural communities of Gegharkunik, Nerkin Getashen is able to source seasonal workforce required for all types of agricultural activities from the community.

Women are involved in all agricultural activities. They are also habitually recruited to harvest potatoes in Vardenis. There are no women groups specialized in wild collection, however some women individually engage in wild collection, primarily for household needs.

### Relevance of the Project to community needs and readiness to contribute

Nerkin Getashen administration did not express readiness to contribute to the pasture improvement component of the Project.

Likewise, the farmers were not interested in the arable land improvement component, given the eligibility requirements. They argued that the unused land plots are very small (about 0.2 hectares) and that farmers would have no interest in applying jointly, even if such opportunity was presented (as one of the participants put it "I wouldn't even collaborate with my son"). Moreover, they pointed out that they wouldn't be able to ensure that newly cultivated land stays intact, with no animals allowed to graze on it.


# VAGHASHEN

| | |
|---|---|
| Total population | 4021 |
| Total number of households | 1283 |
| Number of HHs who had HH member(s) leaving Armenia to work abroad in 2021 | 80% 1025 |
| Number of HHs who had HH member(s) leaving the community to work elsewhere in Armenia in 2021 | 2% 30 |
| Number of displaced families from Artsakh that were resettled in the community in 2020-2021 | 5 |
| Number of households having 1-3 hectares of arable land | 0 |

## LAND USE

| | | |
|---|---|---|
| 46 | Total area of hay **meadows** in the community (hectares) | |
| 0 | Unused hay **meadows** (hectares) | 0% |
| 400 | Total area of **arable land** in the community (hectares) | |
| 300 | **Arable land** not used for its purpose (hectares) | 75% |
| 0 | **Arable land** not used at all (hectares) | 0% |
| 398 | Total area of community **pastures** (hectares) | |
| 300 | Unused **pastures** (hectares) | 75% |

## ANIMAL HUSBANDRY

| | |
|---|---|
| 790 | Number of **households** engaged in animal husbandry (cattle and/or small ruminants) |
| 1800 | Total headcount of cattle in the community |
| 976 | Total headcount of small ruminants in the community |
| cattle 2 ruminants 1 | Number of herds that leave the community |
| 50% | Volume of locally sourced fodder as percent of overall fodder demand, 2020-2021 |
| 80 to 100 | Avg. annual volume of fodder required per one cattle, bales |
| 2000 to 2500 | Price of 1 bale of fodder, AMD, 2021 |

## COMMUNITY RESOURCES

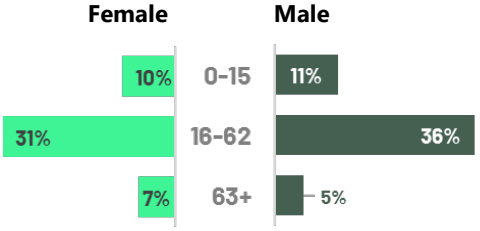
### Available Agricultural Machinery

| 6 | 2 | 18 | 5 |
|---|---|---|---|
| Grass Mowers | Balers | Tractors | Line-Sowers |

### Available Human Capital

| 3 | 2 |
|---|---|
| Agronomists | Veterinarians |

### Gender-age distribution of population




### Existing cooperatives

"Pasture users cooperative", active

### Previous relevant rehabilitation projects

No response

### Seasonal workforce daily rates AMD 5000-10000

## Reasons for not using the land

*Arable land*

As per the records of the Community Hall, 300 hectares (or 75%) of Vaghashen's arable land is not cultivated, and instead used as grasslands and pastures. Among reasons for not cultivating the land, the following have been brought up:

- Lack of irrigation (only the used areas are irrigated)
- About 30% of the unused land is extremely rocky
- Lack of quality seeds
- Rodent abundance

*Pastures*

As per the collected data, 300 hectares (75%) of Vaghashen's pastures are not used. As a result, 1800 cattle and 976 small ruminants graze on just 98 hectares of pastures and 300 hectares of unused arable land, resulting in heavy overgrazing.

Among reasons for not using three quarters of the pastures, community members referred to the following:

- Pastures are rocky
- Very sparse vegetation, especially in draught years

At the same time, the farmers noted that Yezidi community from Vayots Dzor, rents out and uses some of Vaghashen's pastures.

*Hay meadows*

According to the survey, all of Vaghashen's 46 hectares hay meadows are being used.

## Fodder provision issues

For fodder, Vaghashen farmers harvest natural grass, as well as cultivate alfalfa. Sainfoin is not cultivated due to high prices for seeds. The produced/harvested fodder is usually enough to supply 80% of the required fodder, however in 2020-2021, due to draughts, only 50% of the fodder was sourced locally. The rest of the fodder was mostly procured from Vardenis market (exact origin unknown).

Vaghashen farmers note fodder prices rising from 1200 AMD to 2000-2500 AMD per bale in the past three years. They previously used to procure up to 50% of the fodder from Al Lcher area, and consider the significant increase in fodder prices, in part, due to post-war realities.

### Needs with respect to fodder production and pasture improvement

As per the assessment of community leaders and farmers, Vaghashen's most important needs in terms of pasture improvement and fodder production are:

- Alfalfa and sainfoin seeds
- Fertilizers
- Eradication of rodents

### Seasonal workforce availability

Vaghashen faces serious shortages of seasonal workforce, given the extremely high labor migration rates. They also find recruiting seasonal workers from nearby communities to be quite challenging and costly.

Women are involved in agriculture, but wild collection is not practiced.

### Relevance of the Project to community needs and readiness to contribute

Vaghashen administration expressed interest in contributing to the pasture improvement component of the Project, if it was to be implemented on the nearby pastures.

However, the uncultivated arable land is not fit for the Project requirements (each family has about 0.3 hectares of land, and even that is fragmented). There was no consensus as to whether or not it would be possible for the owners of some adjacent land plots to collaborate (given also that most of them are away during the agricultural season), even if Project provided such opportunity.

A general observation regarding Vaghashen is that it looks and feels like an urban settlement, with population rather uninterested in agriculture and relying heavily on remittances from labor migrants.

Perhaps also worth noting is that Vaghashen administration was approached three times for data (once by Shen representative to collect preliminary data, once via formal questionnaire and once via a follow-up call) and each time provided different data on the use of land resources. Summarized above is the data provided at the final attempt, but considering the previous discrepancies, one might treat it with caution.


# VARDENIK

| | |
|---|---|
| Total population | 8212 |
| Total number of households | 3009 |
| Number of HHs who had HH member(s) leaving Armenia to work abroad in 2021 | 12% 365 |
| Number of HHs who had HH member(s) leaving the community to work elsewhere in Armenia in 2021 | 9% 280 |
| Number of displaced families from Artsakh that were resettled in the community in 2020-2021 | 0 |
| Number of households having 1-3 hectares of arable land | 46 |

## LAND USE

| | | |
|---|---|---|
| 1048 | Total area of hay **meadows** in the community (hectares) | |
| 210 | Unused hay **meadows** (hectares) | 20% |
| 1878 | Total area of **arable land** in the community (hectares) | |
| 220 | **Arable land** not used for its purpose (hectares) | 12% |
| 120 | **Arable land** not used at all (hectares) | 6% |
| 9213 | Total area of community **pastures** (hectares) | |
| 3850 | Unused **pastures** (hectares) | 42% |

## ANIMAL HUSBANDRY

| | |
|---|---|
| 742 | Number of **households** engaged in animal husbandry (cattle and/or small ruminants) |
| 2764 | Total headcount of cattle in the community |
| 436 | Total headcount of small ruminants in the community |
| cattle 7 ruminants 2 | Number of herds that leave the community |
| 70% | Volume of locally sourced fodder as percent of overall fodder demand, 2020-2021 |
| 120 | Avg. annual volume of fodder required per one cattle, bales |
| 2300 | Price of 1 bale of fodder, AMD, 2021 |

## COMMUNITY RESOURCES

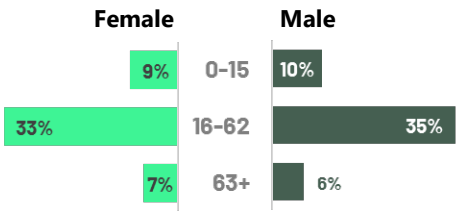
### Available Agricultural Machinery

| 12 | 7 | 19 | 6 |
|---|---|---|---|
| Grass Mowers | Balers | Tractors | Line-Sowers |

### Available Human Capital

| 18 | 1 | 32 | 65 |
|---|---|---|---|
| Agronomists | Veterinarians | Agriculture Machinists | Mechanists |

### Gender-age distribution of population




### Existing cooperatives

"Pasture users cooperative", active

### Previous relevant rehabilitation projects

None

### Seasonal workforce daily rates AMD5000-10000

## Reasons for not using the land

*Arable land*

As per the records of the Community Hall, 340 hectares (or 18%) of Vardenik's arable land is not cultivated. Of these, 120 hectares are not used at all, while 220 hectares are used as grasslands and pastures. Among reasons for not cultivating the land, the following have been brought up:

- The uncultivated arable land is low-grade, provides low yield and has hardened due to prolonged non-use (over 30 years)
- The unused land is located far from the community
- Lack of irrigation

*Pastures*

As per the collected data, 3850 hectares (42%) of Vardenik's pastures are not used. Farmers noted that about 30 families take their herds to distant pastures for summer. These distant pastures have pastorals and water points. However, in Soviet times, about 500 families used to spend summers in the distant pastures.

Among reasons for not using over 40% of the pastures, community members referred to the following:

- Pastures are located far from the community (up to 15 km)
- Roads leading to some of these pastures are unpassable
- The livestock count is low (due to low profitability), no need to use distant pastures

*Hay meadows*

According to the survey, the reasons for not using 210 hectares (20%) of community's hay meadows are:

- Distance from the community and bad roads
- Sparse vegetation due to draughts
- No irrigation

## Fodder provision issues

According to the focus groups participants, Vardenik farmers do not cultivate fodder crops, instead, relying on harvesting natural grass. This supplied about 70% of the required fodder in 2020-2021, while the rest was mostly procured from Gegharkunik (80%), and some procured from other marzes.

Vardenik farmers note fodder prices rising from 1000 AMD to 2300 AMD per bale in the past three years, and claim that due to fodder supply issues the livestock heads have been reduced by about 40%.

About 20% of Vardenik's hay meadows were in Al Lcher area and the farmers do not have access to it ever since the 2020 war.

### Needs with respect to fodder production and pasture improvement

As per the assessment of community leaders and farmers, Vardenik's most important needs in terms of pasture improvement and fodder production are:

- Alfalfa and sainfoin seeds
- Improvement of roads to pastures
- Pasture improvement in mid-range and distant areas

Notably, farmers participating in the focus group stated that they could invest in fodder production on their own, however animal husbandry is not profitable, which is why they have not considered it.

### Seasonal workforce availability

Vardenik being one of the largest communities in Gegharkunik, availability of seasonal workforce for any type of agricultural activity is not an issue, all of the workforce is sourced locally.

Women are involved in all agricultural activities. There are some women groups (as well as individuals) who engage in wild collection for household consumption and for sale to "Sareri Barik" organization.

### Relevance of the Project to community needs and readiness to contribute

While Vardenik administration thought the pasture improvement component of the Project would be useful for the community, they left the question on whether or not the community would be ready to contribute to the Project unanswered.

Farmers who participated in the focus group were not overly enthused about the Project either, because they found animal husbandry unprofitable in general. At the same time, they did a very good job spreading the news about the Project among other farmers, and in just a few days following the focus group, Shen representative received numerous inquiries from eligible farmers expressing interest in the Project.


# ARTSVANIST

| | |
|---|---|
| Total population | 3209 |
| Total number of households | 1040 |
| Number of HHs who had HH member(s) leaving Armenia to work abroad in 2021 | 43%<br>450 |
| Number of HHs who had HH member(s) leaving the community to work elsewhere in Armenia in 2021 | 11.5%<br>120 |
| Number of displaced families from Artsakh that were resettled in the community in 2020-2021 | 0 |
| Number of households having 1-3 hectares of arable land | 500 |

## LAND USE

| | | |
|---|---|---|
| 405 | Total area of hay **meadows** in the community (hectares) | |
| 150 | Unused hay **meadows** (hectares) | 37% |
| 1521 | Total area of **arable land** in the community (hectares) | |
| 920 | **Arable land** not used for its purpose (hectares) | 60% |
| 400 | **Arable land** not used at all (hectares) | 26% |
| 3217 | Total area of community **pastures** (hectares) | |
| 2000 | Unused **pastures** (hectares) | 62% |

## ANIMAL HUSBANDRY

| | |
|---|---|
| 535 | Number of **households** engaged in animal husbandry (cattle and/or small ruminants) |
| 1405 | Total headcount of cattle in the community |
| 1935 | Total headcount of small ruminants in the community |
| cattle 3<br>ruminants 3 | Number of herds that leave the community |
| 20 to 30 % | Volume of locally sourced fodder as percent of overall fodder demand, 2020-2021 |
| 100 | Avg. annual volume of fodder required per one cattle, bales |
| 2000 | Price of 1 bale of fodder, AMD, 2021 |

## COMMUNITY RESOURCES

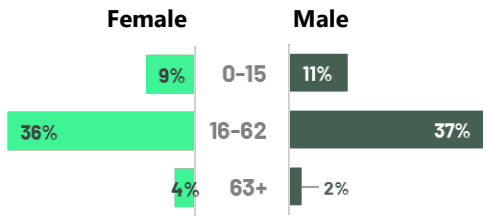
### Available Agricultural Machinery

| 4 | 2 | 2 | 1 |
|---|---|---|---|
| Grass Mower | Baler | Tractors | Line-Sowers |

### Available Human Capital

| 2 | 3 | 15 |
|---|---|---|
| Agronomists | Veterinarians | Mechanists |

### Gender-age distribution of population




### Existing cooperatives

"Artsvanist consumer cooperative", active

### Previous relevant rehabilitation projects

None

### Seasonal workforce daily rates AMD5000-10000

## Reasons for not using the land

*Arable land*

As per the records of the Community Hall, 1320 hectares (as much as 86%) of Artsvanist's arable lands are not cultivated. Of these, 400 hectares are not used at all, while 920 hectares are used as grasslands and pastures. Among reasons for not cultivating the land, the following have been brought up:

- Lack of proper agricultural machinery (the available machinery is old and deteriorated)
- Fuel is expensive
- Due to prolonged non-use (over 30 years), the soil has eroded and hardened

*Pastures*

As per the collected data, 2000 hectares (62%) of Artsvanist's pastures are not used. Among reasons for not using the pastures, community members referred to the following:

- Pastures are located far from the community (10-20 km) and have no infrastructure
- The used pastures (and arable land used as pastures) are enough for the community's livestock

With respect to the second argument, however, the very fact that over 900 hectares of arable land is used as pastures is quite concerning.

*Hay meadows*

According to the survey, the only reason for not using 150 hectares (37%) of community's hay meadows is lack of financial resources.

## Fodder provision issues

Artsvanist farmers do not cultivate fodder crops, rather relying on harvesting natural grass. This usually supplies about 70% of the required fodder, but in 2020-2021, due to draughts, they were able to meet only 20-30% of the demand. Most of the fodder (70-80%) was therefore procured from Vardenis market. The farmers had difficulty estimating what percentage of the procured fodder originated in Gegharkunik vs. in other marzes.

Artsvanist farmers note fodder prices rising from about 1200 AMD to 2000 AMD per bale in the past three years, and claim that due to fodder supply issues the livestock heads have been reduced by 30-40%.

The focus group participants mentioned that before the 2020 war some farmers used to take their livestock (about 70 cattle and 150 small ruminants) to Karvachar and pay the locals to graze them there in summers. They also used to buy grass harvested from

Karvachar in Vardenis market, but couldn't tell what percentage of the procured fodder came specifically from Karvachar ("a lot of grass sold at the market came from there").

In light of severe shortages of locally produced (harvested) fodder and significant increase in fodder prices, it is somewhat puzzling that having access to 150 hectares of unused hay meadows, the farmers do not utilize it "due to lack of financial resources."

### Needs with respect to fodder production and pasture improvement

As per the assessment of community leaders and farmers, Artsvanist's most important needs in terms of pasture improvement and fodder production are:

- Soil analysis
- Fertilizers
- Alfalfa and sainfoin seeds

### Seasonal workforce availability

The focus groups participants claimed that there are no groups or individuals in Artsvanist providing paid services for seasonal agricultural activities. Farmers work solely on their own land plots and occasionally recruit seasonal workers from nearby communities (mostly for potato harvesting).

Women are involved in all agricultural activities. There are no women groups specialized in wild collection, however some women individually engage in wild collection, mostly collecting sea buckthorns, sorrel and lilies for household needs.

### Relevance of the Project to community needs and readiness to contribute

Artsvanist community leaders and farmers find both pasture improvement and arable land improvement components of the Project relevant to their needs, and are ready to provide the required contribution.


# KARCHAGHBYUR

| | |
|---|---|
| Total population | 2274 |
| Total number of households (HHs) | 703 |
| Number of HHs who had HH member(s) leaving Armenia to work abroad in 2021 | 17% 120 |
| Number of HHs who had HH member(s) leaving the community to work elsewhere in Armenia in 2021 | 28% 200 |
| Number of displaced families from Artsakh that were resettled in the community in 2020-2021 | 2 |
| Number of households having 1-3 hectares of arable land | 400 |

## LAND USE

| | | |
|---|---|---|
| 300 | Total area of hay **meadows** in the community (hectares) | |
| 120 | Unused hay **meadows** (hectares) | 40% |
| 1300 | Total area of **arable land** in the community (hectares) | |
| 500 | **Arable land** not used for its purpose (hectares) | 38% |
| 50 | **Arable land** not used at all (hectares) | 4% |
| 2800 | Total area of community **pastures** (hectares) | |
| 500 | Unused **pastures** (hectares) | 18% |

## ANIMAL HUSBANDRY

| | |
|---|---|
| 307 | Number of **households** engaged in animal husbandry (cattle and/or small ruminants) |
| 1402 | Total headcount of cattle in the community |
| 1145 | Total headcount of small ruminants in the community |
| cattle 5 ruminants 3 | Number of herds that leave the community |
| 40% | Volume of locally sourced fodder as percent of overall fodder demand, 2020-2021 |
| 80 to 100 | Avg. annual volume of fodder required per one cattle, bales |
| 2000 | Price of 1 bale of fodder, AMD, 2021 |

## COMMUNITY RESOURCES

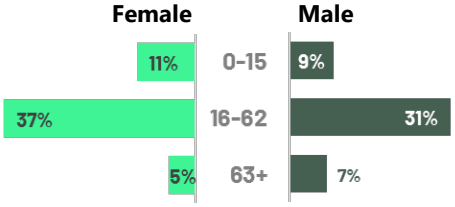
### Available Agricultural Machinery

| | | | | |
|---|---|---|---|---|
| 5 | 4 | 20 | 1 | 1 |
| Grass Mowers | Balers | Tractors | Line-Sowers | Combines |

### Available Human Capital

| | | |
|---|---|---|
| 1 | 60 | 40 |
| Veterinarians | Agriculture Machinists | Mechanists |

### Gender-age distribution of population




### Existing cooperatives

None

### Previous relevant rehabilitation projects

Some pasture areas cleaned from rocks

### Seasonal workforce daily rates AMD5000-8000

## Reasons for not using the land

*Arable land*

As per the records of the Community Hall, 550 hectares (or 42%) of Karchaghbyur's arable land is not cultivated. Of these, 50 hectares are not used at all, while 500 hectares are used as grasslands and pastures. Among reasons for not cultivating the land, the following have been brought up:

- 90% of the uncultivated arable land is very rocky, available agricultural machinery cannot work it effectively
- About 200-300 hectares of the uncultivated land is located in the third zone and is not irrigated, hence it transformed to natural grassland (barley was cultivated here previously)
- No soil analysis to inform cultivation; the yield is very low and the farmers don't have data to know how to improve it
- Cultivating this land is not cost-effective (high cost, low income)

*Pastures*

As per the collected data, 500 hectares (18%) of Karchaghbyur's pastures are not used.

Among reasons for not using about one fifth of the pastures, the community members referred to the following:

- These pastures are located far from the community (25-30 km)
- Pastures are rocky
- The vegetation is sparse and low-calorie
- The roads to these pastures are hard to pass
- There are no animal shelters in these pastures

*Hay meadows*

According to the survey, the main reason for not using 120 hectares (40%) of community's hay meadows is their low yield of grass.

## Fodder provision issues

Although Karchaghbyur farmers cultivate some alfalfa, sainfoin and barley for fodder, they argue that cultivating fodder is more expensive than buying it, because the seeds are expensive and low-quality and do not provide much yield (also because the "soil is dead"). According to the farmers' estimates, the fodder produced and harvested in the community covered only about 40% of the overall fodder demand in 2020-2021. About half of the shortage was overcome by procuring fodder from Gegharkunik, the other half being procured from other marzes.

Farmers note fodder prices rising from 1000 AMD to 2000 AMD per bale in the past three years, and claim that due to fodder supply issues the livestock heads have been reduced by over 40% in 2021.

Karchaghbyur farmers used to harvest grass from Karvachar in the past (amounting to about 30% of the total volume of required fodder), hence their fodder supply was also affected by the outcomes of the 2020 war.

### Needs with respect to fodder production and pasture improvement

As per the assessment of community leaders and farmers, Karchaghbyur's most important needs in terms of pasture improvement and fodder production are:

- Alfalfa and sainfoin seeds
- Agricultural machinery for crushing/collecting stones and ploughing hardened soil
- Cheap fuel
- Pasture improvement in an area called "Darbni dosher"

### Seasonal workforce availability

Seasonal workforce is available in Karchaghbyur for common agricultural services

Women are involved in all agricultural activities. There are women groups, as well as individuals, specialized in wild collection, mostly collecting lilies, sea buckthorns and sorrel.

### Relevance of the Project to community needs and readiness to contribute

Karchaghbyur community leaders and farmers find both pasture improvement and arable land improvement components of the Project relevant to their needs, and are ready to provide the required contribution.

A specific comment in this regard was:

- While the majority of farmers own at least 1 hectare of arable land, the land plots are fragmented (located in different zones). Given such opportunity, owners of neighboring land plots could apply to the Project jointly


# LCHAVAN

| | |
|---|---|
| Total population | 521 |
| Total number of households | 122 |
| Number of HHs who had HH member(s) leaving Armenia to work abroad in 2021 | 26% 32 |
| Number of HHs who had HH member(s) leaving the community to work elsewhere in Armenia in 2021 | 3% 4 |
| Number of displaced families from Artsakh that were resettled in the community in 2020-2021 | 4 |
| Number of households having 1-3 hectares of arable land | 20 |

## LAND USE

| | | |
|---|---|---|
| 54 | Total area of hay **meadows** in the community (hectares) | |
| 0 | Unused hay **meadows** (hectares) | 0% |
| 624 | Total area of **arable land** in the community (hectares) | |
| 60 | **Arable land** not used for its purpose (hectares) | 10% |
| 30 | **Arable land** not used at all (hectares) | 5% |
| 390 | Total area of community **pastures** (hectares) | |
| 150 | Unused **pastures** (hectares) | 38% |

## ANIMAL HUSBANDRY

| | |
|---|---|
| 118 | Number of **households** engaged in animal husbandry (cattle and/or small ruminants) |
| 890 | Total headcount of cattle in the community |
| 350 | Total headcount of small ruminants in the community |
| cattle 3 ruminants 1 | Number of herds that leave the community |
| 50% | Volume of locally sourced fodder as percent of overall fodder demand, 2020-2021 |
| 100 to 120 | Avg. annual volume of fodder required per one cattle, bales |
| 2000 | Price of 1 bale of fodder, AMD, 2021 |

## COMMUNITY RESOURCES

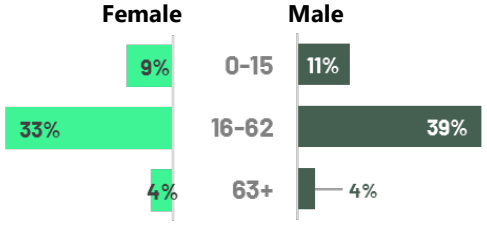
### Available Agricultural Machinery

| 32 | 4 | 25 | 3 |
|---|---|---|---|
| Grass Mowers | Balers | Tractors | Line-Sowers |

### Available Human Capital

| 2 | 2 | 40 | 35 |
|---|---|---|---|
| Agronomists | Veterinarians | Agriculture Machinists | Mechanists |

### Gender-age distribution of population




### Existing cooperatives

None

### Previous relevant rehabilitation projects

UN pasture improvement project

### Seasonal workforce daily rates AMD5000-8000

## Reasons for not using the land

*Arable land*

As per the records of the Community Hall, 90 hectares (or 15%) of Lchavan's arable land is not cultivated. Of these, 30 hectares are not used at all, while 60 hectares are used as pastures. Among reasons for not cultivating the land, the following have been brought up:

- The uncultivated arable land is located far from the community (6km)
- These land plots are very rocky due to previous melioration
- Lack of irrigation
- Due to prolonged non-use (8-10 years), the land has deteriorated, and rehabilitation requires machinery, seeds and fertilizers that farmers cannot afford

*Pastures*

As per the collected data, 150 hectares (38%) of Lchavan's pastures are not used. Among reasons for not using over 150 hectares of the pastures, community members referred to the following:

- Pastures are overgrazed and degraded
- Pastures are rocky, some with no vegetation

With 38% of the pastures not used, the used pastures are now also being overgrazed. As a counter-measure, the farmers graze some of the animals on unused arable land or on pastures of nearby communities.

*Hay meadows*

According to the survey, Lchavan uses all 54 hectares of community's hay meadows.

## Fodder provision issues

In addition to harvesting grass from the hay meadows, Lchavan farmers cultivate alfalfa and sainfoin. However, due to draughts, the yield of fodder has drastically decreased. Usually, the produced and harvested fodder covers up to 70% of the overall demand, however in 2020-2021 it only met 50% of the demand. Farmers procured the rest of the required fodder from the Martuni market, but couldn't specify what proportion of it came from Gegharkunik vs. from other marzes. At the same time, the participants estimated that over 50% of fodder shortage was previously overcome by procurements from Karvachar.

Lchavan farmers note fodder prices rising from 1000 AMD to 2000 AMD per bale in the past three years, and claim that due to fodder supply issues the livestock heads have been reduced by 40% in 2021.

### Needs with respect to fodder production and pasture improvement

As per the assessment of community leaders and farmers, Lchavan's most important needs in terms of pasture improvement and fodder production are:

- Sainfoin seeds
- Fuel
- Agricultural machinery (combine, harvester)
- Pasture improvement – collecting rocks, fertilizing

### Seasonal workforce availability

Seasonal workforce is available locally for all types of agricultural activities. Lchavan occasionally recruits women from neighboring villages during potato harvest season.

Women are involved in all agricultural activities. There are no women groups specialized in wild collection, however some women individually engage in wild collection to provide for household needs.

### Relevance of the Project to community needs and readiness to contribute

Lchavan community leaders and farmers find both pasture improvement and arable land improvement components of the Project relevant to their needs, and are ready to provide the required contribution.

Some of the specific comments and in this regard were:

- Many farmers own 1-3 hectares of arable land. Specifically, there are two areas of unused arable land (40-hectare and 60-hectare) that are well-suited for the Project requirements. However, the arable land is extremely rocky, and it remains to be seen whether it is feasible to improve it using the proposed methodology
- While pasture improvement is deemed extremely necessary, the community members claimed it wouldn't be possible to control their preservation (keep animals from grazing on the improved areas until the vegetation is fully restored)


# MAKENIS

| | |
|---|---|
| Total population | 443 |
| Total number of households | 145 |
| Number of HHs who had HH member(s) leaving Armenia to work abroad in 2021 | 28% 40 |
| Number of HHs who had HH member(s) leaving the community to work elsewhere in Armenia in 2021 | 14% 20 |
| Number of displaced families from Artsakh that were resettled in the community in 2020-2021 | 1 |
| Number of households having 1-3 hectares of arable land | 20 |

## LAND USE

| | | |
|---|---|---|
| 208 | Total area of hay **meadows** in the community (hectares) | |
| 0 | Unused hay **meadows** (hectares) | 0% |
| 693 | Total area of **arable land** in the community (hectares) | |
| 553 | **Arable land** not used for its purpose (hectares) | 80% |
| 0 | **Arable land** not used at all (hectares) | 0% |
| 2430 | Total area of community **pastures** (hectares) | |
| 0 | Unused **pastures** (hectares) | 0% |

## ANIMAL HUSBANDRY

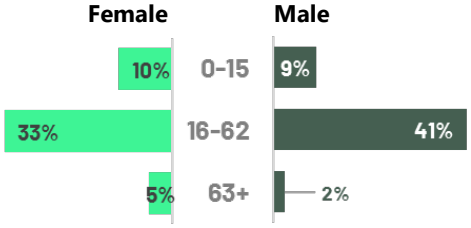
| | |
|---|---|
| 123 | Number of **households** engaged in animal husbandry (cattle and/or small ruminants) |
| 672 | Total headcount of cattle in the community |
| 730 | Total headcount of small ruminants in the community |
| cattle 4 | Number of herds that leave the community |
| 50% | Volume of locally sourced fodder as percent of overall fodder demand, 2020-2021 |
| 100 to 120 | Avg. annual volume of fodder required per one cattle, bales |
| 2000 | Price of 1 bale of fodder, AMD, 2021 |

## COMMUNITY RESOURCES

**Available Agricultural Machinery** 3 Tractors

**Available Human Capital** 1 Veterinarians

### Gender-age distribution of population




### Existing cooperatives

None

### Previous relevant rehabilitation projects

None

### Seasonal workforce daily rates AMD 6000-8000

## Reasons for not using the land

*Arable land*

As per the records of the Community Hall, 553 hectares (or 80%) of Makenis arable land is not cultivated, and used as pasture instead. Among reasons for not cultivating the land, the following have been brought up:

- Due to prolonged non-use (5-25 years), the soil has hardened
- Lack of agricultural machinery to rehabilitate the deteriorated land
- Lack of fertilizers
- Irrigation network has deteriorated over time due to non-use, rehabilitation is costly

*Pastures and hay meadows*

As per the collected data, all of Makenis pastures and hay meadows are being used. Community members think that the pastures are sufficient for the current livestock count and the pastures are not overgrazed.

## Fodder provision issues

Besides harvesting natural grass from hay meadows, Makenis farmers cultivate sainfoin and alfalfa, and are usually able to source 70-80% of the required fodder locally. In 2020-2021, however, draughts resulted in the self-sufficiency level dropping to around 50-60%, the rest being procured from Martuni market. The farmers did not know what proportion of the procured fodder was actually produced in Gegharkunik vs. in other marzes.

Makenis farmers note fodder prices rising from about 700 AMD to 2000 AMD per bale in the past three years, and claim that due to fodder supply issues the livestock heads have been reduced by 25% in 2021.

Makenis farmers previously used Al Lcher grasslands to meet about 30% of the fodder demand, but have not been able to do so ever since the 2020 war broke out.

## Needs with respect to fodder production and pasture improvement

As per the assessment of Makenis leaders and farmers, the community's most important needs in terms of fodder production are:

- Sainfoin and alfalfa seeds
- Fertilizers
- Fuel
- Appropriate agricultural machinery to loosen the hardened soil

Makenis administration did not voice any specific needs with respect to pasture improvement.

### Seasonal workforce availability

According to focus group participants, Makenis doesn't have any shortages of seasonal workforce. Workforce can be sourced locally for all types of agricultural services.

Women are involved in all agricultural activities. There are no women groups specialized in wild collection, however some women individually engage in wild collection for household consumption and for sale (mostly collecting sorrel, falcaria, lilies and rosehips).

### Relevance of the Project to community needs and readiness to contribute

Makenis farmers find the arable land improvement component of the Project relevant to their needs, and are ready to provide the required contribution.

While the community administration expressed readiness to contribute to the pasture improvement component of the Project, they did not elaborate on the specific needs they would like to see addressed.


# KHACHAGHBYUR

| | |
|---|---|
| Total population | 1310 |
| Total number of households | 426 |
| Number of HHs who had HH member(s) leaving Armenia to work abroad in 2021 | 20% 87 |
| Number of HHs who had HH member(s) leaving the community to work elsewhere in Armenia in 2021 | 14% 60 |
| Number of displaced families from Artsakh that were resettled in the community in 2020-2021 | 3 |
| Number of households having 1-3 hectares of arable land | 300 |

## LAND USE

| | | |
|---|---|---|
| 234 | Total area of hay **meadows** in the community (hectares) | |
| 120 | Unused hay **meadows** (hectares) | 51% |
| 1017 | Total area of **arable land** in the community (hectares) | |
| 600 | **Arable land** not used for its purpose (hectares) | 59% |
| 300 | **Arable land** not used at all (hectares) | 29.5% |
| 1120 | Total area of community **pastures** (hectares) | |
| 800 | Unused **pastures** (hectares) | 71% |

## ANIMAL HUSBANDRY

| | |
|---|---|
| 110 | Number of **households** engaged in animal husbandry (cattle and/or small ruminants) |
| 850 | Total headcount of cattle in the community |
| 1100 | Total headcount of small ruminants in the community |
| cattle 4 ruminants 4 | Number of herds that leave the community |
| 50% | Volume of locally sourced fodder as percent of overall fodder demand, 2020-2021 |
| 80 to 100 | Avg. annual volume of fodder required per one cattle, bales |
| 2000 | Price of 1 bale of fodder, AMD, 2021 |

## COMMUNITY RESOURCES

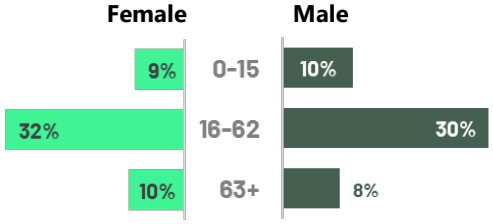
### Available Agricultural Machinery

| 10 | 3 | 10 | 2 |
|---|---|---|---|
| Grass Mowers | Balers | Tractors | Line-Sowers |

### Available Human Capital

| 10 | 2 | 50 | 15 |
|---|---|---|---|
| Agronomists | Veterinarians | Agriculture Machinists | Mechanists |

### Gender-age distribution of population




### Existing cooperatives

"Rosa -1" agriculture cooperative, Milk processing

### Previous relevant rehabilitation projects

None

### Seasonal workforce daily rates AMD 5000-8000

## Reasons for not using the land

*Arable land*

As per the records of the Community Hall, 900 hectares (as much as 88%) of Khachaghbyur's arable land is not cultivated. Of these, 300 hectares are not used at all, while 600 hectares are used as pastures.

Among reasons for not cultivating the land, the following have been brought up:

- The uncultivated arable land is located far from the community (10-15km)
- Due to prolonged non-use, the soil has hardened and needs to be plowed several times to become fit for cultivation
- Lack of appropriate agricultural machinery
- Fuel is expensive
- Lack of irrigation

*Pastures*

As per the collected data, 800 hectares (71%) of Khachaghbyur's pastures are not used. As a result, 850 cattle and 1100 small ruminants graze on just 320 hectares of pastures and 600 hectares of unused arable land.

The primary reason for not using over 70% of the pastures is that these pastures are located far from the community (23 km) and have been left in the neutral zone after the 2020 war.

*Hay meadows*

According to the survey, the reasons for not using 120 hectares (51%) of community's hay meadows are:

- Located in the mountains, far from the community
- No vegetation

## Fodder provision issues

Khachaghbyur farmers cultivate sainfoin and harvest natural grass from the hay meadows. In no-draught years, this supplies about 90% of the required fodder; however, in 2020-2021, only 50% of the fodder was sourced locally, the rest procured mostly from Gegharkunik (10% from other marzes).

Khachaghbyur farmers note fodder prices rising from 1000 AMD to 2000 AMD per bale in the past three years, and claim that due to fodder supply issues the livestock heads have been reduced by 50% over the past two years.

Previously, about 60-70% of the grass was harvested from hay meadows rented in Karvachar, therefore Khachaghbyur's fodder supply was significantly affected by the outcomes of the 2020 war.

### Needs with respect to fodder production and pasture improvement

The only urgent need brought up by Khachaghbyur's community leaders and farmers with respect to fodder production was provision of appropriate agricultural machinery to rehabilitate the long unused arable land. No specific requests were voiced with respect to pasture improvement.

### Seasonal workforce availability

Khachaghbyur faces seasonal workforce shortages, because, as per the assessment of community members, a large portion of workforce has emigrated from the community. When needed, farmers recruit additional workforce from nearby communities (mostly for potato harvesting and weeding).

Women are involved in all agricultural activities. Wild collection is not practiced.

### Relevance of the Project to community needs and readiness to contribute

Khachaghbyur farmers find the arable land improvement components of the Project relevant to their needs, and are ready to provide the required contribution. However, most of the unused arable land plots are small (less than 1 hectare).

The community administration left the question on their readiness to contribute to the pasture improvement component unanswered.


# LUSAKUNK

| | |
|---|---|
| Total population | 1503 |
| Total number of households | 283 |
| Number of HHs who had HH member(s) leaving Armenia to work abroad in 2021 | 17% 47 |
| Number of HHs who had HH member(s) leaving the community to work elsewhere in Armenia in 2021 | 13% 36 |
| Number of displaced families from Artsakh that were resettled in the community in 2020-2021 | 9 |
| Number of households having 1-3 hectares of arable land | 29 |

## LAND USE

| | | |
|---|---|---|
| 483 | Total area of hay **meadows** in the community (hectares) | |
| 0 | Unused hay **meadows** (hectares) | 0% |
| 1246 | Total area of **arable land** in the community (hectares) | |
| 292 | **Arable land** not used for its purpose (hectares) | 23% |
| 212 | **Arable land** not used at all (hectares) | 17% |
| 180 | Total area of community **pastures** (hectares) | |
| 92 | Unused **pastures** (hectares) | 51% |

## ANIMAL HUSBANDRY

| | |
|---|---|
| 300 | Number of **households** engaged in animal husbandry (cattle and/or small ruminants) |
| 1153 | Total headcount of cattle in the community |
| 1097 | Total headcount of small ruminants in the community |
| cattle 2 ruminants 1 | Number of herds that leave the community |
| 50 to 60 % | Volume of locally sourced fodder as percent of overall fodder demand, 2020-2021 |
| 100 | Avg. annual volume of fodder required per one cattle, bales |
| 2000 | Price of 1 bale of fodder, AMD, 2021 |

## COMMUNITY RESOURCES

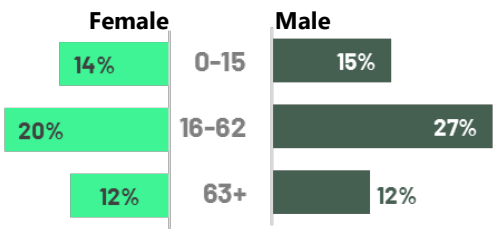
### Available Agricultural Machinery

| 15 | 5 | 10 | 3 | 1 |
|---|---|---|---|---|
| Grass Mowers | Balers | Tractors | Line-Sowers | Combine |

### Available Human Capital

| 10 | 3 | 10 | 30 |
|---|---|---|---|
| Agronomists | Veterinarians | Agriculture Machinists | Mechanists |

### Gender-age distribution of population




### Existing cooperatives

None

### Previous relevant rehabilitation projects

None

### Seasonal workforce daily rates AMD 5000-8000

## Reasons for not using the land

*Arable land*

As per the records of the Community Hall, 504 hectares (or 40%) of Lusakunk's arable land is not cultivated. Of these, 212 hectares are not used at all, while 292 hectares are used as pastures.

Among reasons for not cultivating the land, the following have been brought up:

- The best quality land is cultivated, the rest is damaged due to melioration
- The unused land hasn't been cultivated for a long time and needs rehabilitation, but the community lacks appropriated machinery, seeds and fertilizers to do so
- Agriculture, in general, is not cost-effective

*Pastures*

As per the collected data, 92 hectares (51%) of Lusakunk's pastures are not used. The fact that 1153 cattle and 1097 small ruminants graze on less than 90 hectares of pastures and less than 300 hectares of unused arable land points to severe overgrazing.

The main reason for not using half of the pastures is that these pastures are located right by the road, and have been degraded due to overuse. In this regard, the farmers commented that they graze some of the animals on pastures rented from the neighboring community.

*Hay meadows*

According to the survey, Lusakunk uses all 483 hectares of its hay meadows.

## Fodder provision issues

Lusakunk's local fodder supply is generated by cultivating grain crops, alfalfa and some sainfoin, as well as harvesting grass from the hay meadows. Even so, this only supplied about 20% of the required fodder in 2020-2021 (50-60% in no-draught years). The fodder shortage is overcome by procuring fodder from Gegharkunik markets, but the farmers could not indicate what proportion of purchased fodder is grown in Gegharkunik vs. in other marzes.

Lusakunk farmers note fodder prices rising from 1000 AMD to 2000 AMD per bale in the past three years. Moreover, farmers previously used Al Lcher grasslands to harvest about 30-40% of the required fodder, but haven't had access to these grasslands ever since the 2020 war.

## Needs with respect to fodder production and pasture improvement

As per the assessment of community leaders and farmers, Lusakunk's most important needs in terms of pasture improvement and fodder production are:

- Ploughing machinery
- Sainfoin seeds
- Fertilizers
- Pasture improvement in areas called “Karmir qarer”, “Arzanik”, “Demer” and “Orojaghek”

### Seasonal workforce availability

Lusakunk is able to source all of the required seasonal workforce locally.

Women are involved in all agricultural activities. There are no women groups specialized in wild collection, however some women individually engage in wild collection for household consumption (mostly sorrel, falcaria and lilies).

### Relevance of the Project to community needs and readiness to contribute

Lusakunk community leaders and farmers find both pasture improvement and arable land improvement components of the Project relevant to their needs.

Some of the specific comments and requests in this regard were:

- While farmers are ready to provide the required contribution for arable land improvement, the community is not ready to co-finance pasture improvement.
- Most of the land owners have 1 hectare of arable land, split into two plots located far from each other. Given such opportunity, owners of neighboring land plots could apply to the Project jointly.


# METS MASRIK

| | |
|---|---|
| Total population | 2750 |
| Total number of households | 720 |
| Number of HHs who had HH member(s) leaving Armenia to work abroad in 2021 | 8% 61 |
| Number of HHs who had HH member(s) leaving the community to work elsewhere in Armenia in 2021 | 5% 33 |
| Number of displaced families from Artsakh that were resettled in the community in 2020-2021 | 10 |
| Number of households having 1-3 hectares of arable land | 1100 |

## LAND USE

| | | |
|---|---|---|
| 57 | Total area of hay **meadows** in the community (hectares) | |
| 0 | Unused hay **meadows** (hectares) | 0% |
| 2500 | Total area of **arable land** in the community (hectares) | |
| 0 | **Arable land** not used for its purpose (hectares) | 0% |
| 0 | **Arable land** not used at all (hectares) | 0% |
| 230 | Total area of community **pastures** (hectares) | |
| 0 | Unused **pastures** (hectares) | 0% |

## ANIMAL HUSBANDRY

| | |
|---|---|
| 550 | Number of **households** engaged in animal husbandry (cattle and/or small ruminants) |
| 1235 | Total headcount of cattle in the community |
| 1730 | Total headcount of small ruminants in the community |
| 40% | Volume of locally sourced fodder as percent of overall fodder demand, 2020-2021 |
| 100 to 120 | Avg. annual volume of fodder required per one cattle, bales |
| 2500 | Price of 1 bale of fodder, AMD, 2021 |

## COMMUNITY RESOURCES

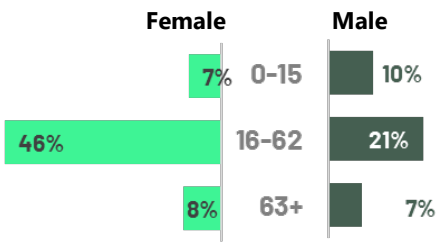
### Available Agricultural Machinery

| | | | | |
|---|---|---|---|---|
| 15 | 8 | 11 | 6 | 9 |
| Grass Mowers | Balers | Tractors | Line-Sowers | Combines |

### Available Human Capital

| | | | |
|---|---|---|---|
| 3 | 2 | 103 | 50 |
| Agronomists | Veterinarians | Agriculture Machinists | Mechanists |

### Gender-age distribution of population




### Existing cooperatives

"Pasture users cooperative", active

### Previous relevant rehabilitation projects

None

### Seasonal workforce daily rates AMD 6000-7000

### Reasons for not using the land

Mets Masrik is unique in that all of its land resources are being used. This goes for both arable land, pastures and hay meadows.

### Fodder provision issues

For fodder, Mets Masrik farmers cultivate alfalfa and sainfoin, as well as harvest natural grass. In no-draught years Mets Masrik is able to source 100% of the required fodder locally (the only fully self-sufficient community among all surveyed communities); however, in 2020-2021 farmers were able to meet only 40% of the local demand.

They procured the shortage from markets in Gegharkunik, noting that fodder prices have increased from about 1000 AMD to 2500 AMD per bale in the past three years, and claiming that due to fodder supply issues the livestock heads have been reduced by 30%.

### Needs with respect to fodder production and pasture improvement

As per the assessment of community leaders and farmers, Mets Masrik's most important need in terms of pasture improvement and fodder production are:

- Quality fertilizers, other than saltpeter
- Pasture improvement in the area called "Saz"

### Seasonal workforce availability

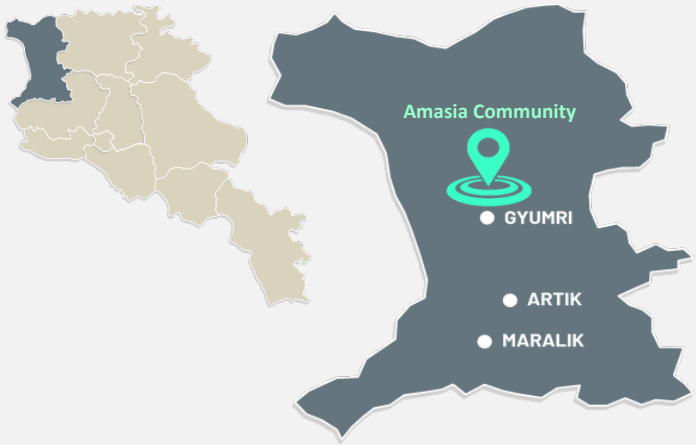
Community members work on their own farms. When additional paid seasonal workforce is required, 90% is recruited from other communities, predominantly from Chambarak, and only 10% is sourced locally ("don't want to work short term").

Women are involved in all agricultural activities. Wild collection is not practiced.

### Relevance of the Project to community needs and readiness to contribute

The Project is not relevant to Mets Masrik, since all of the private arable land is cultivated and the community is not ready to provide contribution for pasture improvement.

# AMASIA ENLARGED COMMUNITY




Amasia
Aregnadem
Bandivan
Byurakn
Gtashen
Hovtun
Jradzor
Kamkhut
Meghrashat
Voghji

## OVERVIEW

| | |
|---|---|
| 5472 | Total population |
| 1631 | Total number of households (HHs) |
| 15.5% 252 | Number of HHs who had HH member(s) leaving Armenia to work abroad in 2021 |
| 3% 53 | Number of HHs who had HH member(s) leaving the community to work elsewhere in Armenia in 2021 |
| 0 | Number of displaced families from Artsakh that were resettled in the community in 2020-2021 |
| 179 | Number of households having 1-3 hectares of arable land |

## LAND USE

| | | |
|---|---|---|
| 1363 | Total area of hay **meadows** in the community (hectares) | |
| 559 | Unused hay **meadows** (hectares) | 41% |
| 5990 | Total area of **arable land** in the community (hectares) | |
| 412 | **Arable land** not used for its purpose (hectares) | 7% |
| 281 | **Arable land** not used at all (hectares) | 5% |
| 7217 | Total area of community **pastures** (hectares) | |
| 1693 | Unused **pastures** (hectares) | 23% |

## ANIMAL HUSBANDRY

| | |
|---|---|
| 738 | Number of **households** engaged in animal husbandry |
| 5379 | Total headcount of cattle in the community |
| 9701 | Total headcount of small ruminants in the community |
| cattle 19 ruminants 11 | Number of herds that leave the community |
| 15-50% | Volume of locally sourced fodder as percent of overall fodder demand, 2020-2021 |
| 70 to 120 | Avg. annual volume of fodder required per one cattle, bales |
| 1600 - 2300 | Price of 1 bale of fodder, AMD, 2021 |

## COMMUNITY RESOURCES

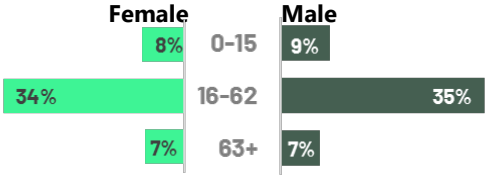
### Available Agricultural Machinery

| | | |
|---|---|---|
| 18 Grass Mowers | 20 Balers | 87 Tractors |
| 8 Plows | 2 Combines | 26 Line-Sowers |

### Available Human Capital

| | | | |
|---|---|---|---|
| 34 Agronomists | 18 Veterinarians | 20 Agriculture Machinists | 113 Mechanists |

### Gender-age distribution of population, 2021



## Reasons for not using the land

*Arable land*

Unlike most of the surveyed Gegharkunik communities, 88% of Amasia enlarged community's arable land is being cultivated. Of the 693 uncultivated hectares, 281 hectares are not used at all, while 412 hectares are used as grasslands and pastures.

*(Note: hereafter, "AMASIA" stands for the enlarged community, whereas "Amasia" stands for the settlement, included in the enlarged community).*

Out of 10 settlements comprising AMASIA, Aregnadem, Meghrashat and Voghji don't have any uncultivated arable land.

Among main reasons for not cultivating the land, representatives of the rest of the settlements brought up the following:

- Degradation of land due to prolonged non-use *(Byurakn, Amasia, Kamkhut, Gtashen, Bandivan)*
- Lack of irrigation *(Byurakn, Kamkhut, Gtashen, Bandivan)*
- Land is rocky *(Jradzor)*
- Land plots are small, cultivation is not cost-effective *(Jradzor)*
- Land is located on slopes *(Amasia, Hovtun, Bandivan)*

*Pastures*

As per the collected data, 1693 hectares (23%) of AMASIA's pastures are not used. Aregnadem and Jradzor use all of their pastures, whereas the following have been brought up as main reasons for not using some of the pastures in the remaining 8 settlements:

- Most of these pastures are located at the Armenia-Turkish border (community members refer to these as being "inside the border", meaning beyond outposts manned by Russian border guards), hence farmers need to obtain permission to access these areas and need to be accompanied by an officer at all times *(Meghrashat, Voghji, Kamkhut, Gtashen)*
- Pastures are degraded, vegetation is sparse or non-existent *(Amasia, Kamkhut, Gtashen, Bandivan, Hovtun)*
- Some of the pastures are located on hard-to-reach mountain slopes *(Amasia, Kamkhut, Gtashen)*
- Some of the pastures have been rented out *(Byurakn, Meghrashat)*
- Some pastures are located in between plots of arable land *(Voghji)*

*Hay meadows*

According to the survey, Byurakn, Voghji, Jradzor and Bandivan are using all of their hay meadows. The main reasons for not using 559 hectares (41%) of AMASIA's hay meadows by the remaining 6 settlements are:

- Degradation of the soil and subsequently low yield of grass *(Amasia, Kamkhut, Gtashen, Aregnadem)*
- Some of the hay meadows being located on steep slopes *(Amasia, Kamkhut, Gtashen)*
- Hay meadows being located "inside the border" *(Meghrashat)*
- Bad roads to a specific area of hay meadows *(Hovtun;* only 1.5 hectare is unused)

### Fodder provision issues

AMASIA farmers cultivate various fodder crops (sainfoin, alfalfa, oats, barley, corn), as well as harvest natural grass from the community's hay meadows. In favorable climate conditions, Byurakn, Meghrashat, Voghji and Hovtun are able to locally produce and harvest upwards of 80% of the required fodder, the other 6 settlements being able to meet about 60-70% of the local fodder demand.

The self-sufficiency level, however, dropped significantly in 2020-2021, with most of the settlements able to source less than half, and in case of Aregnadem, Byurakn, Voghji, Jradzor and Amasia – 30% or less, of the required fodder locally. Most of the deficit (70-100% depending on the settlement) was overcome by procuring fodder from other communities of Shirak, and only in case of Bandivan and Hovtun 50%+ of the procured volume of fodder came from another marz (mostly Lori).

AMASIA farmers note fodder prices rising from 500 AMD to 1600-2300 AMD per bale in the past three years, meaning a significant strain has been put on the farmers' budgets, considering they were able to locally produce/harvest much less fodder than normally.

### Needs with respect to fodder production and pasture improvement

As per the assessment of community leaders and farmers, AMASIA's most important needs in terms of fodder production are:

- Perennial fodder crops seeds (alfalfa, sainfoin, phleum)
- Appropriate fertilizers
- Appropriate agricultural machinery to plough the arable land that hasn't been cultivated in a long time
- Fuel
- Improvement of the irrigation network

In terms of pasture improvement, the community leaders expressed the following specific needs:

- In Aregnadem, pasture improvement in "Hrachi Sar - 3" area
- In Byurakn, improvement of roads leading to pastures, as well as improvement of pastures located between the settlement and "Haykadzor" area
- In Voghji, pasture improvement in "Dzor I" and "Dzor II" areas

- In Jradzor, pasture improvement near “Hoghmik” area
- In Amasia, pasture improvement in areas near the forest road
- In Kamkhut and Gtashen, pasture improvement in areas neighboring Aregnadem
- In Bandivan, pasture improvement in an area called “Sari tak”

### Previous arable land or pasture rehabilitation projects

The community leaders shared the following information regarding previous rehabilitation projects implemented in the individual settlements:

| | |
|---|---|
| Amasia | Joint pasture improvement project by Strategic Development Agency (SDA) and the community: installation of water-points and a pastoral, improvement of pasture roads |
| Aregnadem | Installation of water-points |
| Bandivan | No previous projects |
| Byurakn | Pasture irrigation and installation of two water-points |
| Gtashen | Joint pasture improvement project by Strategic Development Agency (SDA) and the community: installation of water-points and a pastoral |
| Hovtun | Installation of water-points |
| Jradzor | Improvement of pasture roads and installation of two water-points |
| Kamkhut | Joint pasture improvement project by Strategic Development Agency (SDA) and the community: installation of water-points and a pastoral |
| Meghrashat | Joint pasture improvement project by Strategic Development Agency (SDA) and the community: pasture irrigation and installation of water-points |
| Voghji | No previous projects |

### Seasonal workforce availability

According to the feedback from focus group participants, except for Amasia and Bandivan, where local workforce is fully sufficient, in all other settlements shortage of seasonal workforce is a serious issue and about 70% of the required workforce is recruited from nearby communities (“with great difficulty” at that). Daily rates for hired work range from 5,000 to 15,000 AMD for various services.

Women are involved in all agricultural activities. There are women (mostly individuals, rather than groups) specialized in wild collection in Amasia, Kamkhut, Gtashen, Bandivan and Hovtun. They mostly collect cephalaria, sorrel, thyme, rosehips, and lilies for household needs, but also for sale or barter. As per the focus groups participants, wild collection is not practiced in Aregnadem, Byurakn, Meghrashat, Voghji and Jradzor.

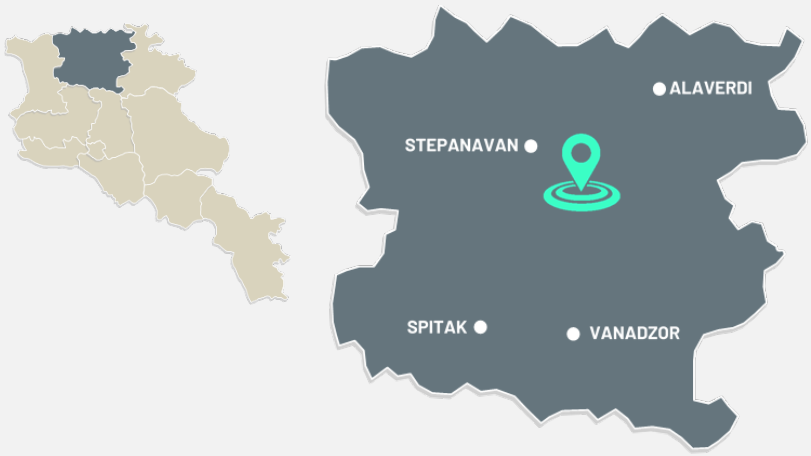
According to the survey, there are only two active cooperatives in AMASIA: “Women for community development” consumer cooperative of Byurakn, and “Pasture users cooperative” in Gtashen.

### Relevance of the Project to community needs and readiness to contribute

AMASIA community leaders and farmers found both pasture improvement and arable land improvement components of the Project relevant to their needs. At the same time, not all of the settlements included in the community meet the Project requirements.

Some specific observations in this regard are:

- Aregnadem, Meghrashat and Voghji do not have any unused arable land, while Bandivan only has 1 hectare that meets the Project criteria
- In Jradzor, the unused land plots are too small
- Byurakn, Amasia, Gtashen, Kamkhut and Hovtun meet the eligibility requirements, farmers are interested in the project and are ready to provide the required contribution for the arable land improvement component of the Project
- AMASIA is interested in and expressed readiness to contribute to the pasture improvement component of the Project




# GYULAGARAK ENLARGED COMMUNITY

Amrakits
Gargar
Gyulagarak
Hobardzi
Kurtan
Pushkino
Vardablur

## OVERVIEW

| | |
|---|---|
| 8839 | Total population |
| 2518 | Total number of households (HHs) |
| 15%<br>375 | Number of households who had household member(s) leaving Armenia to work abroad in 2021 |
| 7%<br>168 | Number of households who had household member(s) leaving the community to work elsewhere in Armenia in 2021 |
| 9 | Number of displaced families from Artsakh that were resettled in the community in 2020-2021 |
| 1160 | Number of households having 1-3 hectares of arable land |

## LAND USE

| | | |
|---|---|---|
| 1369 | Total area of hay **meadows** in the community (hectares) | |
| 287 | Unused hay **meadows** (hectares) | 21% |
| 4250 | Total area of **arable land** in the community (hectares) | |
| 0 | **Arable land** not used for its purpose (hectares) | 0% |
| 246 | **Arable land** not used at all (hectares) | 6% |
| 3094 | Total area of community **pastures** (hectares) | |
| 645 | Unused **pastures** (hectares) | 21% |

## ANIMAL HUSBANDRY

| | |
|---|---|
| 1548 | Number of **households** engaged in animal husbandry |
| 5284 | Total headcount of cattle in the community |
| 1945 | Total headcount of small ruminants in the community |
| cattle 32<br>ruminants 12 | Number of herds that leave the community |
| 60-70% | Volume of locally sourced fodder as percent of overall fodder demand, 2020-2021 |
| 100 to 120 | Avg. annual volume of fodder required per one cattle, bales |
| 2000 | Price of 1 bale of fodder, AMD, 2021 |

## COMMUNITY RESOURCES

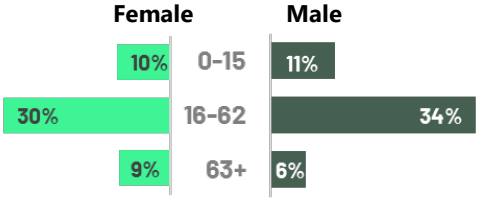
### Available Agricultural Machinery

| | | |
|---|---|---|
| 79<br>Grass Mowers | 32<br>Balers | 136<br>Tractors |
| 5<br>Combines | 24<br>Line-Sowers | |

### Available Human Capital

| | | | |
|---|---|---|---|
| 67<br>Agronomists | 22<br>Veterinarians | 179<br>Agriculture Machinists | 140<br>Mechanists |

### Gender-age distribution of population, 2021



## Reasons for not using the land

*Arable land*

As per the data provided by the community officials, as much as 94% of Gyulagarak enlarged community's arable land is being cultivated (4,004 hectares), while the remaining 246 hectares are not used at all.

*(Note: hereafter, "GYULAGARAK" stands for the enlarged community, whereas "Gyulagarak" stands for the settlement, included in the enlarged community).*

Among main reasons for not cultivating the land, representatives of the settlements included in the community brought up the following:

- Lack of irrigation *(all settlements)*
- Lack of agricultural machinery *(all settlements)*
- Land is located on slopes *(all settlements)*
- Land is fragmented *(all settlements)*
- Degradation of land and subsequently low yield *(Gargar, Hobardzi, Vardablur)*
- The unused land is very rocky *(Gargar, Vardablur)*
- Some of the unused land is swampy *(Gargar, Hobardzi)*

*Pastures*

As per the collected data, 645 hectares (21%) of GYULAGARAK's pastures are not used. The proportion of unused pastures is highest in Kurtan (35%) and lowest in Vardablur and Pushkino (10%). Even with quite high proportion of used pastures, the focus groups participants note that most of the pastures are overgrazed.

The following have been brought up as main reasons for not using some of the pastures:

- These pastures are hard to reach, due to distance from settlements, bad roads, and pastures being located in the mountains *(all settlements)*
- Lack of pasture infrastructure, namely water-points and shelters *(all settlements)*
- Degraded pastures *(Kurtan, Vardablur)*

*Hay meadows*

According to community leaders, the only reason for not using 287 hectares (21%) of GYULAGARAK's hay meadows is their inaccessible location.

## Fodder provision issues

GYULAGARAK farmers cultivate various fodder crops (sainfoin, alfalfa, phleum, oats, barley, corn), as well as harvest natural grass from the community's hay meadows. The community is able to source 60-70% of the required fodder, procuring the rest from other communities in Lori.

GYULAGARAK farmers note fodder prices rising from 1000 AMD to 2000 AMD per bale in the past three years. While Lori was not affected by draughts and therefore their local fodder production did not suffer, the farmers still have to procure 30-40% of the fodder, now at double the price.

## Needs with respect to fodder production and pasture improvement

As per the assessment of community leaders and farmers, GYULAGARAK's most important needs in terms of fodder production are:

- Perennial fodder crops seeds (alfalfa, sainfoin, phleum)
- Appropriate fertilizers
- Appropriate agricultural machinery to harvest the fodder
- Fuel
- Improvement of the irrigation network
- Research on effective fodder production

In terms of pasture improvement, the community expressed the following specific needs:

- In Amrakits, pasture improvement in "Fantani mot", "Antari tak" areas, as well as pastures near the cemetery and the poultry farm
- In Gargar, pasture improvement in area called "Yaler"
- In Gyulagarak, pasture improvement in "St. Gevorg dosh", "Chkants tala", "Heqiati tak", "Tskhkot", "Tsavot gyurt", "Chogyaj" and "Pansionat" areas
- In Hobardzi, pasture improvement in "Potskharakar" area
- In Kurtan, pasture improvement in "Mormonji yal", "Gyadameri", "Chalakaghnut", "Khameri tala", "Dimats", "Dzvaker", "Aghalni" and "Jri en kur" areas
- In Vardablur, pasture improvement in "Potskharakar", "Zamarlu", "Gharsu tala" and "Karhanq" areas

The community members particularly stressed the need to improve pastoral infrastructures (roads to distant pastures, pasture irrigation, water points, pastorals, shelters for animals). If these were available, the farmers would be able to graze the small ruminants in the distant (now unused) pastures to ease the load of the nearby pastures. They also raised the need to implement measures to preserve the improved pastures, particularly investing in electric shepherds.

## Previous arable land or pasture rehabilitation projects

The community leaders shared the following information regarding previous rehabilitation projects implemented in the individual settlements:

| | |
|---|---|
| Amrakits | Installation of one water-point, which is currently out of service |
| Gargar | Pasture rehabilitation project (Shen) |
| Gyulagarak | Pasture improvement project (likely CARMAC): pasture road improvement, installation of two water-points |
| Hobardzi | Animal husbandry development project: installation of water-points, pasture road improvement |
| Kurtan | Installation of water-points in three pasture areas |
| Pushkino | Improvement of pasture roads |
| Vardablur | Pasture improvement project (likely CARMAC): pasture road improvement, installation of one water-point and construction of one pastoral |

## Seasonal workforce availability

According to the feedback from focus group participants, shortage of seasonal workforce is a serious issue, not only in GYULAGARAK, but in all of Lori. Farmers often have to wait for certain services to become available, or do as much work as they can on their own. Daily rates for hired work range from 5,000 to 7,000 AMD for various services.

Women are involved in all agricultural activities. There are women (both groups and individuals) specialized in wild collection. They mostly collect raspberries, thyme and wild pears for household needs and for sale.

According to the survey, the only active cooperative in GYULAGARAK is Vardablur's "Healthy food" women's cooperative that engages in production of non-traditional crops.

## Relevance of the Project to community needs and readiness to contribute

GYULAGARAK community leaders and farmers found both pasture improvement and arable land improvement components of the Project relevant to their needs, but were most interested in pasture improvement. Both the community and the farmers assured that they would be willing to provide the required contribution.

While all of the settlements included in the community generally meet the Project requirements, some specific observations in this regard are:

- Kurtan representatives noted that the unused arable land plots are smaller than 1 hectare, but if the Project allowed so, the farmers might be willing to apply jointly
- Pushkino representatives were not present at the focus group. Even though they responded to the community survey, we are lacking feedback from the farmers as to the relevance of the project, and whether or not they would be willing to get involved.

# CONCLUSIONS AND RECOMMENDATIONS

## Key findings and conclusions

Summarized below are the main conclusions of the baseline study, and the key findings, on which these conclusions are based.

- **Rural smallholders in the 17 surveyed communities face serious fodder provision issues due to inability (and/or lack of motivation) to locally produce fodder crops on one hand, and degradation of pastures and hay meadows on the other. The issue has been exacerbated in the aftermath of COVID-19, 2020 Nagorno-Karabakh war, and due to severe draughts affecting Gegharkunik and Shirak.** In 2020-2021, the vast majority of the surveyed communities were able to source 50% or less of the required fodder locally (through harvesting grass and local production of fodder). Many communities in Gegharkunik (mostly in Vardenis region) lost access to grasslands in Karvachar and Al Lcher that were previously used to harvest grass and fulfilled up to 40% of the fodder demand.

- **Countrywide shortage of fodder resulted in fodder prices spiking and farmers being forced to reduce the livestock heads, due to animal husbandry becoming increasingly unprofitable.** Farmers in all surveyed communities attested to 2 to 3-fold increase in fodder prices over the last three years and claimed that due to fodder supply issues and the increased cost of fodder they have reduced their livestock by as much as 30-50% with further reduction unavoidable in case situation does not improve. Farmers being able to produce/harvest only about 50% (often much less) of the fodder locally, means they have to spend upwards of 100,000 AMD per cattle per year on fodder, which they rightfully find unjustified, considering the low profit margins on dairy products and meat.

- **Fodder shortages are not caused by limited land resources. On the contrary, the land resources are vastly underutilized.** In the 15 surveyed communities of Gegharkunik, 36% of pastures and 20% of hay meadows are not used, with as much as 44% of the arable land not being cultivated. While the situation is somewhat better in Amasia enlarged community of Shirak and in Gyulagarak enlarged community of Lori, still 23% of pastures, 41% of hay meadows and 12% of arable land remains unused in Amasia, and 21% of pastures, 21% of hay meadows and 6% of arable land is not utilized in Gyulagarak.

- **While some of the reasons why the land resources are not used to the fullest are insurmountable or, at the very least, extremely hard to tackle** (such as land being located on unsafe borders or in restricted areas, or road and irrigation infrastructures not just deteriorated, but non-existent)**, many of the challenges can**

**be overcome with proper investments in agricultural assets and inputs.** Among reasons for not cultivating the arable land, the most frequent response was lack of appropriate agricultural machinery to rehabilitate the long-unused, hardened and degraded arable land, as well as lack of financial means to procure quality seeds, fertilizers or fuel.

- **With regards to pastures, lack of appropriate pasture infrastructure in distant pastures (roads, water points, shelters, pastorals), as well as the often hard-to-reach or unsafe location, led to their abandonment. Instead, the nearby pastures are heavily overgrazed, and uncultivated arable land is used as pasture.** This is particularly true for Gegharkunik, where 35% of the overall arable land in the 15 surveyed communities is used as pasture, whereas 36% of the actual pastures remain unutilized.

- **Most of the needs with respect to fodder production and pasture improvement match precisely with the planned Project activities.** The focus groups were designed so as to first collect the community members' assessment of their specific needs, and only then provide details regarding the Project. While some of the articulated needs cannot be addressed in frames of the Project (such as rehabilitation/construction of irrigation networks), the Project is well positioned to meet the needs of potential beneficiaries for quality seeds and fertilizers, as well as for soil analysis and appropriate agricultural machinery to rehabilitate the degraded arable land and pastures.

- **The Project was very well received by representatives of Gegharkunik, Shirak and Lori marzpetarans, by community leadership and farmers in the overwhelming majority of the surveyed rural settlements.** The vast majority of community leaders and farmers expressed interest in participating and readiness to contribute to the Project.

## Recommendations

The following specific recommendations are proposed based on the findings of the baseline study:

- In light of the need to select beneficiary communities from 15 surveyed communities in Gegharkunik, **the baseline study provides definitive arguments to exclude Mets Masrik, Vaghashen and Nerkin Getashen**. Mets Masrik does not have any unused arable land, and the community is not ready to contribute to the pasture improvement component. Vaghashen was not interested in pasture improvement, and the farmers were not enthusiastic about the arable land improvement component either. Nerkin Getashen did not meet the arable land size criteria and the focus groups participants claimed the farmers would not be willing to apply jointly, even if the Project allowed doing so.

- If need arises to further reduce the number of beneficiary villages in Gegharkunik, we would suggest taking a closer look at **Madina and Lchavan**. At a glance, Madina seems very well suited for the Project, because the primary occupation in the community is animal husbandry, and the average size of uncultivated land plots is 1.15 hectares. At the same time, only 4 farmers participated in the focus group, and the initial communication with the community administration (by Shen regional representative) was not indicative of much interest in the Project. In Lchavan, on the other hand, the level of interest was quite high; however, the farmers expressed concern that the unused arable land might be just too rocky to be rehabilitated and cultivated as per Project methodology.

- **In Amasia enlarged community, the arable land improvement component cannot be implemented in Aregnadem, Meghrashat and Voghji**, due to the fact that all of the private arable land is being utilized. **Bandivan and Jradzor** may also be problematic, since Bandivan only has 1 hectare of unused arable land, while in Jradzor the unused land plots are too small. On the other hand, Byurakn, Amasia, Gtashen, Kamkhut and Hovtun meet the eligibility requirements, farmers are interested in the project and are ready to provide the required contribution. The enlarged community is also interested in and expressed readiness to contribute to the pasture improvement component of the Project.

- **In Gyulagarak enraged community, the Project can be implemented in any of the 7 settlements comprising the community**. Farmers from all settlements, except Pushkino (not present at the focus group), found the arable land improvement component relevant to their needs and are ready to contribute. The community, in turn, was very interested in the pasture improvement component, and asserted the Project will have its full support.

- With respect to all recommendations on selection of beneficiary communities, it is important to note that **the shortlist produced based on the results of this study needs to be further reviewed and cross-checked with soil analysis data, site visit notes by agronomists, and feedback from Shen regional representatives** to arrive at the final list of beneficiary communities.

- Based on the feedback from the surveyed communities, it is recommended to **allow owners of small neighboring land plots to apply to the Project jointly**. This is based on the evidence that in many communities the individual land plots (especially those that have not been cultivated for over 8 years) are smaller than 1 hectare and therefore do not meet the requirements set forth in the Project specifications. If the Project allows 3-4 farmers to apply jointly, the project activities and their outcomes will become more effective.

- For pasture improvement to prove effective, it is essential to **take appropriate measures to ensure that the beneficiary communities take responsibility for the preservation of newly improved pastures.** This needs to be clearly communicated to the community leadership and formal guarantees must be put in place prior to commencing any improvement activities.

- The training component of the Project is crucial to proper implementation of the Project. In this regard, we recommend **using this opportunity to not only transfer knowledge and skills specific to the Project activities, but educate farmers on more general topics related to animal husbandry, and, in particular, pasture management**. Our data collection efforts have been a testament to the fact that, farmers and community officials often lack knowledge on basic concepts and indicators (such as, for example, how to arrive at grazing load estimates, and what these estimates may entail).

- It is important to consider that the fieldwork was implemented in November, 2021, when the process of consolidation (enlargement) of communities in frames of the territorial administration reforms has not been completed in Gegharkunik. As of the date of this report, **the 15 communities covered by the survey are now part of three enlarged communities of Gavar, Martuni and Vardenis. In view of this, it is recommended that the Project reaches out to the newly elected community leadership to reconfirm the commitments taken upon by the leaders of the individual settlements.**

# Annex 1. Data collection tools

**1. SURVEY QUESTIONNAIRE FOR MARZPETARANS**

| | |
|---|---|
| Total area of **arable land** in the marz (hectares) | |
| **Arable land** not used for its purpose (hectares) | |
| **Arable land** not used at all (hectares), including arable land transformed to natural hay meadows or pastures | |
| Reasons for not using the **arable land** for its purpose or not using it at all (please list 3-4 most common reasons)<br>1.<br>2.<br>3.<br>4. | |
| Total area of **pastures** in the marz (hectares) | |
| Unused **pastures** (hectares) | |
| Reasons for not using the **pastures** (please list 3-4 most common reasons)<br>1.<br>2.<br>3.<br>4. | |
| Total area of **hay meadows** in the marz (hectares) | |
| Unused **hay meadows** (hectares) | |
| Reasons for not using the **hay meadows** (please list 3-4 most common reasons)<br>1.<br>2.<br>3.<br>4. | |
| Total headcount of **cattle** in the marz | |
| Total headcount of **small ruminants** in the marz | |

**2. SURVEY QUESTIONNAIRE FOR COMMUNITIES**

## Demography

| | |
|---|---|
| 1. **Total population** | |

2. **Gender-age distribution**

| | Female | Male |
|---|---|---|
| 0-15 | | |
| 16-62 | | |
| 63 + | | |

| | | |
|---|---|---|
| 3. | **Total number of households** | |
| 4. | **Number of households who had household member(s) leaving Armenia to work abroad in 2021** | |
| 5. | **Number of households who had household member(s) leaving the community to work elsewhere in Armenia in 2021** | |
| 6. | **Number of displaced families from Artsakh that were resettled in the community in 2020-2021** | |

## Land use

| | | |
|---|---|---|
| 7. | **Total area of hay meadows in the community (hectares)** | |
| 8. | **Unused hay meadows (hectares)** | |
| 9. | **Reasons for not using the hay meadows** | |

| | | |
|---|---|---|
| 10. | **Total area of arable land in the community (hectares)** | |
| 11. | **Arable land not used for its purpose (hectares)** | |
| 12. | **Arable land not used at all (hectares), including arable land transformed to natural hay meadows or pastures** | |
| 13. | **Reasons for not using the arable land for its purpose or not using it at all** | |
| 14. | **How important the restoration of the arable land is for the community, and why?** | |
| 15. | **Number of households having 1-3 hectares of arable land** | |

| | | |
|---|---|---|
| 16. | **Total area of community pastures (hectares)** | |
| 17. | **Unused pastures (hectares)** | |
| 18. | **Reasons for not using the pastures** | |
| 19. | **How important the improvement of pastures is for the community, and why?** (Please, also note which specific locations/areas of pastures need improvement, please specify the commonly used names of the areas) | |

| | |
|---|---|
| 20. | **Please list any previous pasture and arable land rehabilitation projects in the community.** |
| 21. | **Is the community ready to co-finance pasture improvement?** |

## Animal husbandry

| | | |
|---|---|---|
| 22. | **Number of households engaged in animal husbandry (large and/or small ruminants)** | |
| 23. | **Total headcount of cattle in the community** | |
| 24. | **Total headcount of small ruminants in the community** | |
| 25. | **Grazing load per hectare (number of cattle per hectare)** | |
| 26. | **Number of herds that leave the community (please describe in detail)** | |

## Community resources

| | |
|---|---|
| 27. | **Availability of cooperatives in the community** (name, activities) |

28. **Availability in the community of agricultural machinery used in fodder cultivation** (grass mower, baler, appropriate tractors, line-sowing machine, etc.)

| Type of machinery | Quantity |
|---|---|
| | |
| | |
| | |
| | |
| | |

29. **Human capital related to pasture management, animal husbandry and agriculture in the community** (e.g. agronomists, veterinarians, agriculture machinists, mechanists).

| **Specialization** | **Number of specialists** |
|---|---|
| | |
| | |
| | |
| | |
| | |

**3. FOCUS GROUPS GUIDE**

| Topic/questions | Time |
|---|---|
| **PART 1. CURRENT SITUATION AND ISSUES** | **50 min** |
| As per the data received from the municipality, currently __ hectares of arable land in the community are not being used for its purpose or not used at all.<br>**Can you elaborate on the reasons of why this is the case?** | 10 min |
| As per the data received from the municipality, currently __ hectares of pasture in the community are not being used.<br>**Can you elaborate on the reasons of why this is the case?**<br>**Each of the reasons you mentioned relate to about what percentage of the pastures?** | 20 min |
| **Does the volume of fodder produced in the community meet the local demand? If not (not completely), why?**<br>Additional questions:<br>• What type(s) of fodder is produced locally (mixed, sainfoin or alfalfa)?<br>• How many bales of fodder does a family (with 2-5 cattle) buy annually, on average?<br>• Where do farmers buy fodder from? What type(s) of fodder?<br>• What is the price of 1 bale of fodder this year, and what was the price dynamics over the last three years?<br>• On average, how many bales of fodder are procured from other regions of Armenia?<br>• Did the farmers previously procure fodder from Artsakh, and, if so, what were the volumes?<br>• Did herds from the community previously graze in Artsakh, and if so, what percentage of the community's total cattle was that? | 20 min |
| **PART 2. NEEDS, RESOURCES AND OPPORTUNITIES** | **50 min** |
| **What are the community's most important needs relating to pastures and fodder production?** | 20 min |
| **Is seasonal workforce available in the community? If so, what services are offered?**<br>Additional questions:<br>• Are there groups of women in the community who engage in wild collection or other agricultural work?<br>• What is the man/day rate in the community for agricultural work? | 15 min |
| **Brief project presentation by Shen representative** | 10 min |
| (Question to farmers) **Are you ready to contribute 30% of the required costs for arable land improvement by way of labor or financial investment?** | 5 min |