

**Integrated Biodiversity Management,
South Caucasus**

Baseline Study for Aparan Region of Aragatsotn district, RA



BSC Business Support Center Report

Report objective

This report was developed by BSC Business Support Center (hereinafter referred to as **Consultant**) for German Society for International Cooperation (hereinafter referred to as GIZ) to make an initial assessment upon the situation in Aparan region of Aragatsotn district targeted in the framework of “**Integrated Biodiversity Management in South Caucasus**” project (hereinafter referred to as **Project**). 4 communities of Aparan region are especially emphasized within the Project: *Arayi, Kuchak, Lusagyugh* and *Hnaberd*¹ (hereinafter referred to as **the Pilot communities**).

The assessment is based upon studies of the following basic fields:

- ✓ Environment;
- ✓ Socio-economic situation;
- ✓ Land use;
- ✓ Natural resources and their management (practices and legal framework),
- ✓ Key projects and interventions implemented.

2011 – 2016 years were initially set as the effective period of the data collected.

In the report made up below you can find dynamics of significant indicators of social field, economy, natural resources and other related fields in Aragatsotn Province with a special emphasis on Aparan region and the Pilot communities.

The report intends to answer some key questions such as:

- ✓ What fields need improvement?
- ✓ What gaps should be focused on and fulfilled during the Project?
- ✓ What core habits have to be uprooted for further prosperity of the Pilot communities?
- ✓ What infrastructures are missing for drastic alterations in the Pilot communities?

Key findings and Conclusions

Just to make a brief sense of the overall situation in Aragatsotn Province focusing on Aparan region, it is worth mentioning that this area is full of opportunities and potential for development in various directions, such as tourism, agriculture, construction, mining industry and manufacturing, particularly textile and rugs production.

What is interesting to observe, that almost all the Armenian provinces have hidden potentials for prosperity in a variety of fields. The key hinder is lack of resources, networks, limited access to wider markets to demonstrate their capacities, activate their socio-economic life, raise their economic, industrial and ecological significance and occupy a worthy share in the country progress.

To be more specific, having good preconditions for sustainable economic growth, Aragatsotn Province also has obstacles hindering its faster development. For example, the lack of higher

¹ The community is actually located in Aragats region, but in this study is being considered as a target community.

educational institutions in the province, cultural centers highly influences employment rate and life quality of the population.

On the other hand, when going through communities and village settlements, agriculture is not operating in its all potential due to irregular use of natural resources, such as pastures and lands. Here overuse of pastures, land erosion and degradation are among the most crucial and high-priority challenges to be undertaken for urgent solutions.

Here, even if “Integrated Control of Land Erosion in the Mountainous areas of the South Caucasus” project launched in 2015, comes to smooth the situation, anyway, cooperation and combination of facilities and ideas of a few major partners could drastically improve the procedures.

As for the work done, regarding collection of secondary data, we should by all means state, that electronic data such as web-sites, reports and any publications are not standing out and astonishing with their richness and can be considered less helpful than the same categories for international data. Besides, existing data is not properly standardized and from the same source it is quite hard to derive similar data for two communities, regions or other administrative units at the same time. This demonstrates the insufficient performance of municipalities and regional administrations (the issue is common for almost all the country) in terms of transparency and distinctness.

The same issue is observed regarding primary data in community registers, which are supposed to be the most reliable sources for any kind of information upon the community life and people. Here there is a huge problem of maintaining archive documents, lack of use of high technologies (even though all the pilot communities have been beneficiaries of a corresponding project) and tendency of illiterate calculations even of very responsible data (e. g. to be shared with the Armenian National Statistics service). Especially in Aragatsotn Province we also face the issue of missing community registers and availability of quite different types of papers, reports, studies and other related documents, which again are too difficult to combine and set in one general analysis tool.

Contents

Executive summary ii

List of Tables vii

List of Figures viii

List of Pictures ix

List of Abbreviations and Acronyms x

1. INTRODUCTION 1

 1.1 Methodology and tools 1

 1.2 General description of Aragatsotn Province in terms of environmental, socio-economic and other criteria 2

 1.3 Brief Historical Review 3

2. ENVIRONMENT 4

 2.1 Physical-Geographical description and specifics of Aparan region 4

 2.2 Natural-climate conditions and variation: influences on socio-economic situation 6

 2.3 Main natural resources in the area 6

 2.4 Key factors hindering the maintenance of natural resources in the area: analysis from symptoms to causes 7

3. SOCIO-ECONOMIC SITUATION 8

 3.1 Key economic branches developed and developing in the region 8

 3.2 Demography, education, employment, migration, living standards, income and expenses, dependence on natural resources for survival and livelihoods, energy sources and related fields (statistics combined with crosschecked actual data upon) 13

 3.3 The operating institutions in the field 17

4. LAND RESOURCES AND USE 19

 4.1 Land types and use directions: description and mapping 19

 4.2 Vegetation on these lands dependent on their types and influences of use (photos included) 20

 4.3 Significant alterations/changes in the field 20

 4.4 Existing laws and legal regulations: strengths and weaknesses, tangible gaps to fulfill... 22

5. NATURAL RESOURCE MANAGEMENT PRACTICES APPLIED IN THE PILOT REGION 23

 5.1 Mapping of natural resources such as natural forests, pastures, water: general description and threats 23

 5.2 Experience and tendencies in of above-mentioned resources: best practices, habits and proved necessity for improvement 26

6. DEVELOPMENT PROJECTS TARGETING PILOT AREAS FUNDED OR/AND IMPLEMENTED BY INTERNATIONAL AND NATIONAL ORGANIZATIONS FOR THE PERIOD OF 2011 – 2016 YEARS AND ONGOING PROJECTS..... 28

6.1 Short descriptions of projects by implementing/funding organizations, targeted areas and running status (either completed or ongoing) 28

6.2 Best and worst practices: success stories and lessons learnt..... 28

7. Conclusions..... 29

8. Reference List..... 30

9. Appendices 31

List of Tables

Table 1: Aparan geography.....	6
Table 2: Aragatsotn agriculture volume and share in the RA, billion AMD and %	9
Table 3: Aparan region, animals, 2016	9
Table 4: Animal products, Aragatsotn, 2016	10
Table 5: Construction share in the RA volume, mln. AMD and %.....	11
Table 6: Retail trade share in RA volume, mln. AMD and %.....	11
Table 7: Service share in RA volume, mln. AMD and %	11
Table 8: Retail sales outlets, quantity in Aragatsotn	11
Table 9: Export volume and share in the RA, mln. AMD and %.....	12
Table 10: Import volume and share in the RA, mln. AMD and %.....	12
Table 11: Demography in the Pilot communities, age and gender groups, 2016.....	14
Table 12: State secondary schools, attendance in Aragatsotn, 2015/2016 edu. year	14
Table 13: Unemployment rate in Aragatsotn by gender, %, 2014 - 2015	15
Table 14: Migration status by volume, purpose, direction and opportunities in the communities, 2016	16
Table 15: Aragatsotn poverty rate in comparison with the Republican Average, %, 2012 - 2015	16
Table 16: Aragatsotn, income sources for households per capita, AMD, 2015	16
Table 17: Distribution of agricultural lands in Aparan and the Pilot communities by their use and types, ha, 2015.....	19
Table 18: Land use types by agricultural products, Aragatsotn, 2015	20
Table 19: Aparan Reservoirs.....	26

List of Figures

Figure 1: Economy main branches in Aragatsotn, share in RA, %, 2015	8
Figure 2: Industry branches in Aragatsotn Province, mln. AMD, %, 2015	8
Figure 3: Industry volume dynamics in Syunik Province, mln. AMD	9
Figure 4: Animals of production importance, January 1, 2016	10
Figure 5: Service distribution by types in Aragatsotn Province as Of 2016, mln. AMD and %...	12
Figure 6: Population dynamics in the region, 2011 - 2016	13
Figure 7: Number of households in the Pilot communities, as of January 1, 2016	14
Figure 8: Nominal salary per month in average in Aragatsotn, AMD, 2013 - 2015	15
Figure 9: Aragatsotn, distribution of income by sources per capita, AMD, 2015.....	17
Figure 10: Lands of agricultural significance in Aragatsotn, ha 2016	19

List of Pictures

Picture 1: Map of Aragatsotn Province..... 2

Picture 2: Climate in Aparan region..... 6

Picture 3: Distribution of different vegetation and habitat types in Armenia 20

Picture 4: Integrated control of land erosion in the mountainous areas of the South Caucasus
project by GIZ, Project Area..... 21

Picture 5: Forests in Armenia..... 23

Picture 6: Aparan Reservoir 26

List of Abbreviations and Acronyms

edu.	Educational
Ha	Hectares
Km	Kilometers
M	Meters
mln.	Million
Mm	Millimeters
ths.	Thousand
LLC	Limited Liability Company
RA	Republic of Armenia
CARMAC	Community Agricultural Resources Management and Competitiveness
SNCO	State non-commercial institution
ToR	Terms of Reference

1. INTRODUCTION

1.1 Methodology and tools

The procedure of the research went through two key phases based on the data source: A. Desk study and document review for secondary data and B. Key informant interviews for primary details.

Desk study and document review. Through desk study and document review the Consultant collected secondary information about the thematic areas mentioned in the Terms of Reference (ToR) for each target region/sub-region and community, as well as on key projects and reports generated in the relevant fields. Along with the review of regional strategic papers, policies and legal documents, the statistical reports were also analyzed to understand the current environment and socio-economic situation in these regions/communities. The statistical and other analyses were based upon the reports and publications provided by:

- National Statistical Service of Republic of Armenia,
- Regional Municipality of the targeted provinces/regions
- Other state and non-state institutions, Ministries and international organizations.

Key informant interviews. The Consultant conducted individual interviews with key informants and stakeholders (Municipality and Community leadership of targeted regions/sub-regions and communities, etc.) through personal meetings and deep interviews. Particularly, the key interviewees of the primary research phase were the community mayors and/or representatives of mayor's offices.

For ensuring high efficiency, quite a competent and intelligent team member of the Consultant company was instructed in details based upon the Guideline² developed initially. During the interviews she took detailed notes as well as made some voice recordings on spot, later on sharing the collected information in written in electronic version. They were coordinated during all the fieldwork period, received intensive feedback upon materials delivered systematically.

For crosschecking the secondary data collected and analyzed as well as revealing information missing in public materials, archive documents for 2011 – 2016 years³ were also revealed during the visits to the pilot communities. Community registers for population and animals, maps for land types and pasture management as well as other related documents and materials were scanned and received in the mayor's offices.

Finally, all the data received from primary and secondary sources, was accurately combined, estimated in terms of feasibility, analyzed and presented in this report through text paragraphs, tables, charts and illustrations, pictures and smart art.

² See in Appendix 1

³ Only for the communities where the responsible people had access to the documents: in several communities this was impossible due to redecoration of the office, personnel changes, improper discipline

1.2 General description of Aragatsotn Province in terms of environmental, socio-economic and other criteria

The Province of Aragatsotn is located in the western part of Armenia and is surrounded by mountains from its three sides; one is Mount Aragats - the highest peak of Armenia (4,090 meters (m)) which gave the province its name, then in the north-east and the east Pambak and Tsaghkunyats mountain ranges respectively. In the West the province territory stretches along the border with Turkey, and in the north-west, north, east and south it borders Shirak, Lori, Kotayq, the capital Yerevan and Armavir provinces correspondingly. It occupies 2,756 square kilometers (km²) which makes 9.3 % of total area of the RA. As of January 1, 2016 it has a population of 129.8 thousand (ths.)

people which makes 4.3 % of total population of the RA. 29.1 ths. out of its population is urban, yet rural population makes 100.7 ths. The density of population is 47 people per km². The province capital is Ashtarak town, situated on the bank of Kasakh River, in the distance of 19 km to the North-West from Yerevan. Town is the junction of Yerevan-Gyumri and Yerevan-Spitak roads.

The province comprises Ashtarak, Talin, Aparan and Aragats regions. Ashtarak and Talin regions partially are located on the foothills, meanwhile Aparan and Aragats regions and a part of Talin region are located in a mountainous zone, in an altitude of 2,000 -2,500 meters above the sea level. 19 communities of the province have mountainous, and 40 communities have high mountain status.

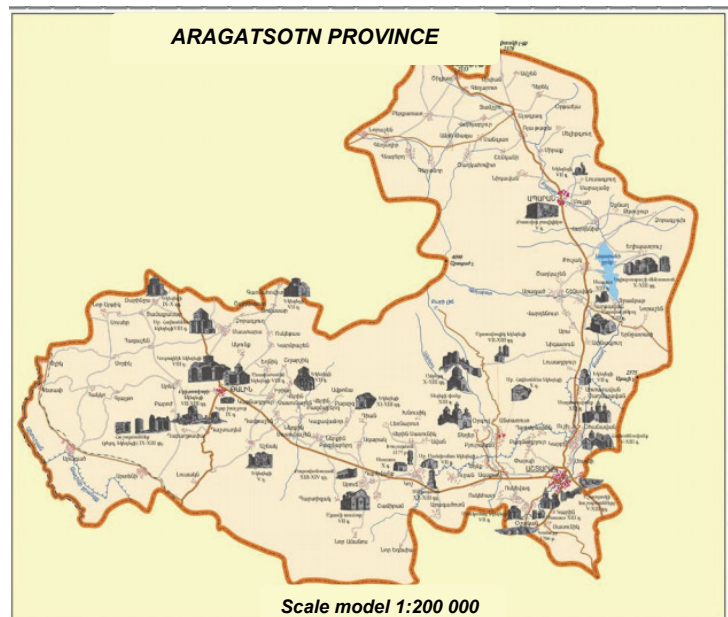
There are 114 rural and 3 urban communities in Aragatsotn Province as of January 1, 2016.

The main river is the Kasakh with its inflows – the Gegharot and the Amberd. The biggest lake is Kari Lich (Stone Lake) which is located in the foothills of Mount Aragats.

The province boasts by many intact and dilapidated medieval monuments –Amberd Fortress, medieval monasteries, Saghmosavank and Oganavank. Not far from the province's center, in the village of Oshakan, there is the tomb of St. Mesrop Mashtots, the founder of Armenian writing, which became the relic of all Armenians all over the world.

The famous Observatory of Byurakan, the Institutes of Radio physics and Electronics, Physical Researches of RA National Academy of Sciences are located in the province.

By location, Lusagyugh and Arayi communities are very close to the Aparan town of Aragatsotn region. The geographic locations of the pre-selected communities ensure certain advantages for the communities in terms of better accessibility to markets for agricultural products.



Picture 1: Map of Aragatsotn Province

1.3 Brief Historical Review

The territory Aragatsotn Province was inhabited even in prehistoric times. The valley of the river Kasagh was very attractive with its fertile lands and mild climate. The finds dated the Bronze Age testify to that. The first large state, the annals of which mentioned this historical area, was Great Armenia. Afterwards came the settlement of Vardkesavan which under the rule of Vagarshak I (117-140) was renamed into Vagarshapat (which became the capital of Great Armenia), and later into the first capital city - Echmiadzin (nowadays the Province of Armavir).

In the Middle Ages the northern part of Aragatsotn was called Amberd Province. In the 9th – 11th centuries the land was a part of Pahlavuni principedom. In the 14th century the territory was plundered and devastated by the armies of Tamerlan. In the beginning of the 16th century the area belonged to Sefevid Iran. In 1639 Aragatsotn was a part of Yerevan khanate and in 1828 together with the areas of East Armenia was annexed to Russia.

2. ENVIRONMENT

2.1 Physical-Geographical description and specifics of Aparan region

Aparan is located in the eastern foothills of Aragats Mountain. Its altitude above the sea level is 1,880 m. The climate is favorable and mountainous. The community has 3 secondary schools, a music school, a culture house, libraries, a hospital, a polyclinic and a communication hub.

The community lands are mainly used as arable, hay lands and pastures. Almost 35 % of the community area is privatized. Out of lands of reservation significance, arables occupy 38 hectares (ha), and pastures 415 ha.

Corn, fodder and plantation crops cultivation is also typical to the community. There are also perannial plantations, but they do not occupy a significant area.

Livestock is one of main agricultural branches in Aparan. Milk and meat processing is developed there, and the main raw material, the milk is mostly processed in the local cheese plant.

Here HayGorg enterprise is operating, where rugs and carpets are produced. There are also enterprises of consumer/household goods, machinery, textile and knitted fabrics production.

Food industry is also developed here, and there is also a plant for dairy processing a cheese production.

In terms of issues in the community, full use of labor resources, reconstruction of drinking and irrigation waterlines, street lighting, gasification of the city should be emphasized and solved.

The next Pilot community is **Arayi**. It is a village within Aparan region, located in 15 km from Aparan town. The distance from the province center Ashtarak is 13,5 km. Previously it used to be called Bazarjik, Bazarjugh. It was finally renamed in 1946. St. Astvatsatsin church was built in the village in the 19th century. The village is located in the western foothills of the Mount of Aragats, 1,850 m high above the sea level.

The village has a school and a communication hub. Privatized lands occupy almost 25 % of the community area. The lands are mostly used as arables, where crop, fodder, plantation corps and fruits are mainly cultivated.

Pastures cover almost 290 ha of the total surface.

Here the population is mostly busy in livestock, aviculture and apiculture. No industrial branch is developed here.

Among the most prior issues reconstruction of drinking waterlines and intracommunity roads is.

The village is annually participating in Aparan New Year celebration with their traditional meals and cultural values.

Kuchak is another Pilot community 8 km to the south from Aparan. The distance from the province center is 18 km.

There is a church and a cemetery of the 17-19th centuries in the village.

It is located 1,850 m high above the sea.

The community is mostly specialized in agriculture. The greatest share of the lands is used as arable, pastures and hay lands. The population there is busy in horticulture, fruit cultivation, corn and fodder crops cultivation. Lands for reservation occupy almost 60 % of the community area.

Lands in the community are mainly used as arable, pastures and hay lands. The people here are busy in fruit, vegetables, corn, and fodder crops production. The reserved lands are almost 60 % of the community area, which are distributed in the following way: - 392 ha of pastures, 120 ha of arable.

Small livestock, aviculture and apiculture are the main agricultural branches here. No industrial branch is developed in the community. There is only an enterprise of food industry, where meat is processed, as well as a carpet weaving plant.

Lusagyugh community is located in 34 km from the province center. It lays along the foothills of Tsaghkunyats mountains, 1,970 m high above the sea level.

The village is rich in springs. The village has been populated since 1829 – 1830.

The village is mainly specialized in agriculture. The significant share of the main agricultural lands is used as arable and hay lands. Rural population is busy in vegetable, corn and fodder crops cultivation. In the farmlands there are perennial plantations, and fruit cultivation is common. Reserved lands make almost 70 % of the community surface, 414 ha out of which are pastures, and 25 ha is the arable.

People are also busy in small and large livestock husbandries, milk and meat production is particularly developed. Industry is not developed here.

Reconstruction of drinking and irrigation waterlines and intra-community roads is of a special importance currently.

Hnaberd is located 15 km to the west from Aparan. The distance from the province center is 57 km. It used to be a small township up to 1995.

In 2 km from the village there is an ancient place called Krkhdayerman, where remains of a fortress of 8-7 centuries B.C. are still reserved.

The village lays in the northern foothills of Aragats Mountain 2,150 m high above the sea level.

There is a secondary school, a library, communication hub, a kindergarten and a medical service point in the village. The leading branch of economy in the community is agriculture. Privatized lands make almost 57 % of the community total area. Pastures make 411 ha out of the reserved lands, arable lands are 90 ha, and hay lands are 20 ha. Rural population is mainly busy in farming, vegetable, and fodder crops cultivation.

Besides horticulture, they are also busy in large and small livestock husbandry and aviculture.

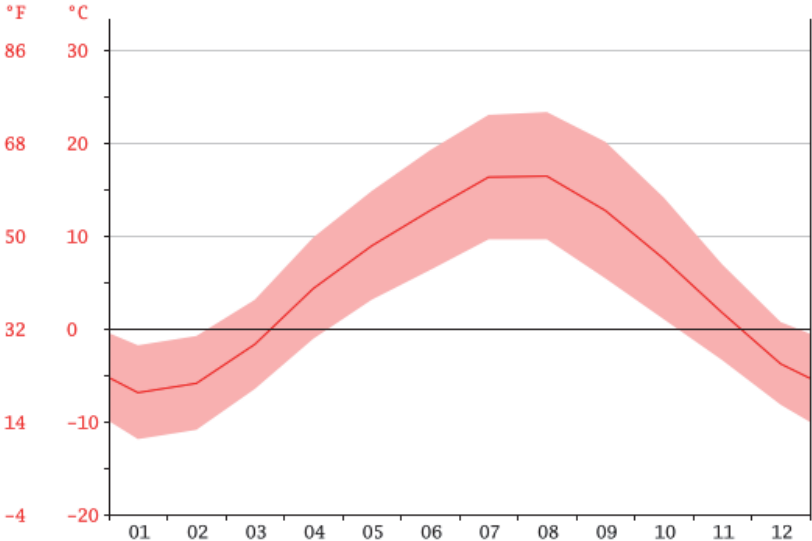
Reconstruction of drinking and irrigation waterlines and intra-community roads is of a special importance to the community and is considered one of the prior issues.

Table 1: Aparan geography

	Distance from the province capital, km	Distance from Aparan, km	Altitude high above the sea level, m
Aparan	32 ⁴	0	1,880
Arayi	13,5	15	1,850
Kuchak	18	8	1,850
Lusagyugh	34	3.3	1,970
Hnaberd	57	15	2,150

2.2 Natural-climate conditions and variation: influences on socio-economic situation

The climate in the pilot region is favorable and mountainous. Winters are prolonged and cold, with thick and constant snow layer. Summers are warm and comparably damp. The average temperature in July varies between +16 - 18 °C, and in January between - 6 - 8 °C. Total annual rainfall is 450 – 600 millimeters (mm). These conditions are common for all the Pilot communities, due to their short distances from each other.



Picture 2: Climate in Aparan region

The natural landscapes are black soil steppe.

In terms of climate contribution to agriculture, Aparan region as well as Aragats region are more favorable for cultivation of a few types of corn, potato and vegetable.

2.3 Main natural resources in the area

Aragatsotn Province is rich in minerals. Especially construction materials, such as tuff, basalt, limestone, alumina, slag, pumice and perlite. The latter is almost 90 % of the former Soviet Union reserves, and is considered to be one of the best ones all over the world regarding its quality characteristics.

The extinct volcanoes Tsaghkasar (2,219 m), Irind (2,050 m) and Arteni (2,047) are located in the province, too.

As for water reserves, they generate from thaw of Aragats Mountain, rainfalls and natural springs.

The large rivers of the province are Kasakh and Geghadzor. There are also lots of ravines (Mastara ravine is the most famous one).

⁴ Distance from the capital city Yerevan is 42 km

Aparan, Halavar, Tsilkar, Nerkin Sasnashen, Davtashen, Talin, Verin Bazmaberd, Kaqavadzor, Shenik, Ashnak and Sabouchi reservoirs are located here.

2.4 Key factors hindering the maintenance of natural resources in the area: analysis from symptoms to causes

In Aparan region, in Melik village there are mines of gold, soil and black tuff, which are not used currently.

In Arayi village the greatest issue is employment. There are households which consist of 9-10 members, 5-6 out of which are adults, and meanwhile, households, where none of the adults works or they are employed, but their earning would be enough only for less people in the family. Of course, this influences the family's social condition, their family relationships, educational level, etc.. This also leads to psychological problems like self-restraint and passive integrity in the society. In its turn this leads to stagnation in terms of education, for example in the community there is only a secondary school (8-year education), and after leaving it, most pupils do not wish to continue education somewhere else.

In Lusagyugh employment is also an issue, due to which lots of people have to leave the country. A hostel used to be here in the Soviet times, but now it's not operating, but in case it would start again, it could employ 20-30 people.

Irrigation system in the village operates at 30 % of its productivity. They do not have a mower in the community and have to lease it.

Hnaberd is rich in construction soil and clay resources, however they are not exploited at all.

According to the mayor's interview, the school building is dilapidated, a culture house and medical institutions should be constructed in the village. Pastures are not sufficient, let alone there are realization/sales problems in the village and people are not interested in developing livestock.

As for Kuchak community, they have a culture house, which was completely ruined, the reconstruction started last year, but it was cancelled, and only now the procedure has been going on since mid-November. There is a clay mine in the village of about 45 ha, but it's not being exploited rationally for the community's and region's favor.

Of course, pastures and land use is a constant and common issue for most areas in the republic.

Recently livestock quantity has increased drastically and the under-disciplined pasture use and irregular management have significantly deteriorated the situation with natural pastures. Irregular use of the pasture areas has drawn to both qualitative and quantitative changes and degradation.

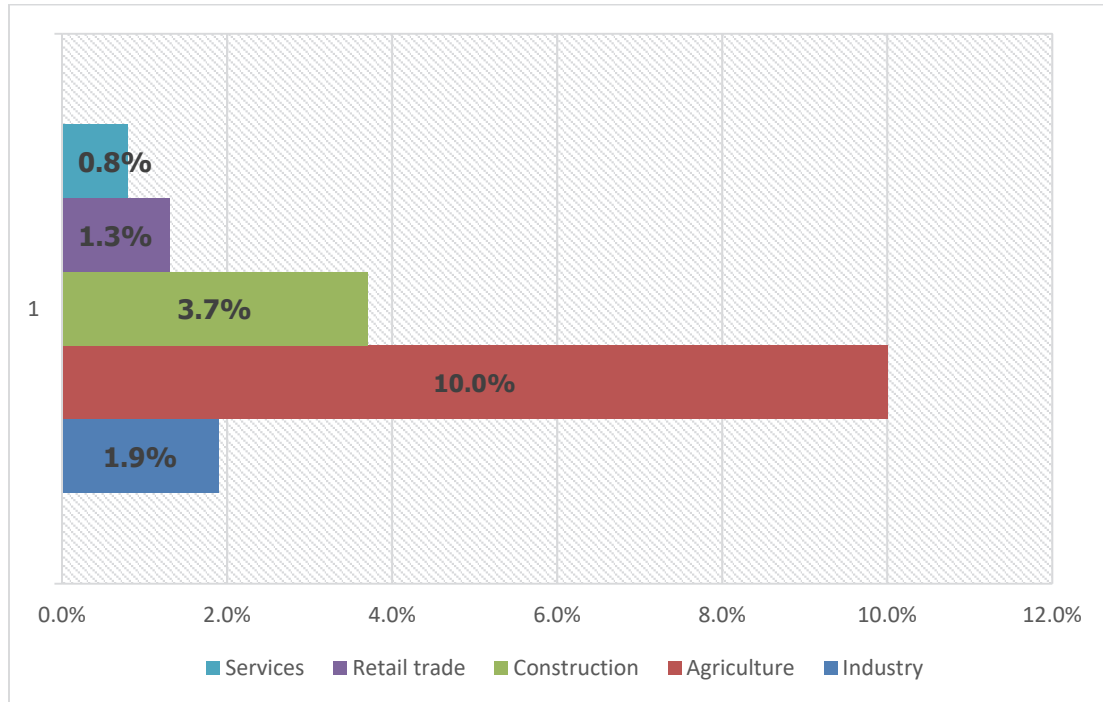
Hereby, due to elemental livestock breeding the influences of risen risks on natural ecosystems has remarkably increased. As a result, general biodiversity, fodder system and livestock production is under high risk, which itself effects socio-economic situation and incomes of the population in general.

3. SOCIO-ECONOMIC SITUATION

3.1 Key economic branches developed and developing in the region

In 2015 the share of economy main branches of RA Aragatsotn Province in total volume of corresponding branches of the republic comprised the following:

Figure 1: Economy main branches in Aragatsotn, share in RA, %, 2015

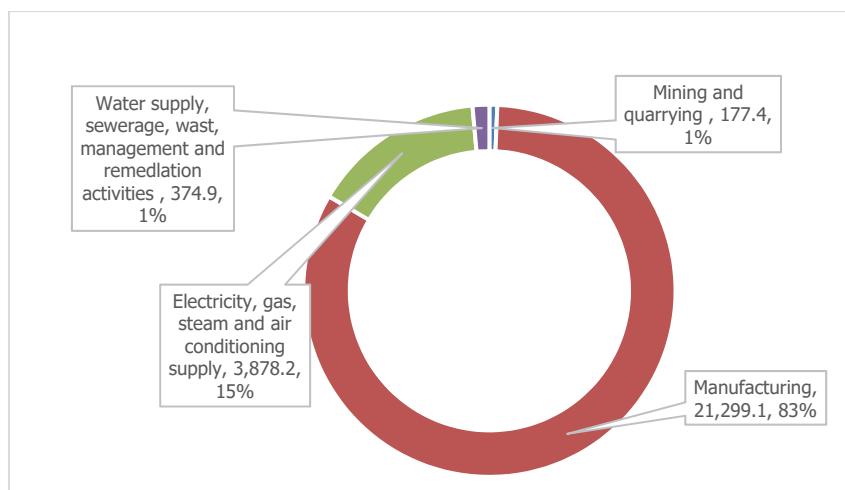


As obvious in the statistic figure, the most developed branches of economy are agriculture and construction.

Industry. The main branch of the province industry is manufacturing. As sub-branches of manufacturing developed in Aragatsotn, we can mention food, beverage and textile productions, carpet weaving.

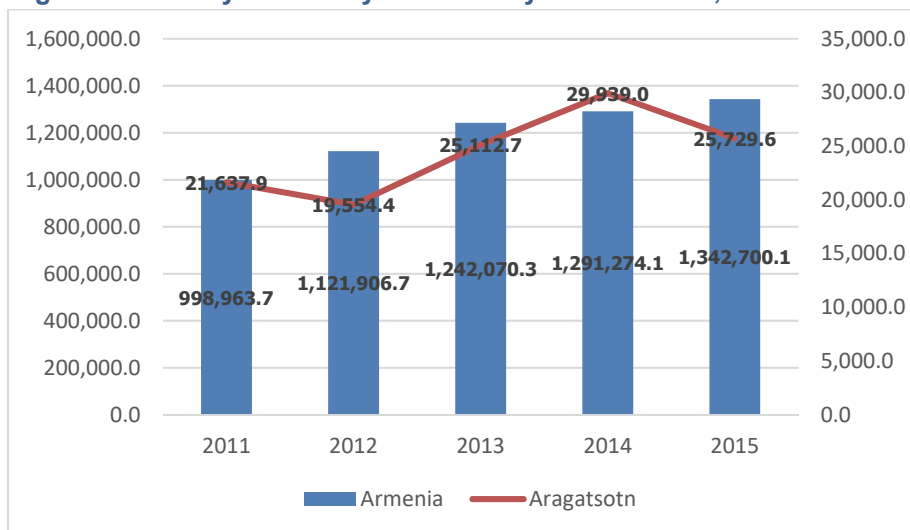
Below you can find the detailed description of industry in the province by its types expressed in million (mln.) AMD.

Figure 2: Industry branches in Aragatsotn Province, mln. AMD, %, 2015



It's also informative to observe the dynamics of Aragatsotn industry in comparison with the indicators of the Republic of Armenia (RA):

Figure 3: Industry volume dynamics in Syunik Province, mln. AMD



Agriculture. The agriculture of the province is mainly specialized in corn, vegetables and fruit cultivation (especially grains and potato growing) and animal husbandry.

Table 2: Aragatsotn agriculture volume and share in the RA, billion AMD and %

	2011	2012	2013	2014	2015
<i>Armenia</i>	795.0	841.5	919.1	993.5	1001.2
<i>Aragatsotn</i>	76.8	86.0	89.2	98.8	100.0
<i>Aragatsotn, %</i>	9.7 %	10.2 %	9.7 %	9.9 %	10.0 %

For estimating the situation in the Pilot communities more objectively, registers on livestock husbandry were received in the mayor's offices and studied in details. However, actually mayor's offices do not often possess this or related information in the same format in written or in documents. Thus, in further analysis upon agriculture and rural communities' livelihood, not all the data is standardized, and there is still some missing or not fully identified information.

In the table below you can see the overall distribution of livestock in the Pilot communities by types of animals and birds included in it:

Table 3: Aparan region, animals, 2016

	Cattle	Small cattle	Goats	Pigs	Horses	Rabbits	Birds	Fur animals	Beehives	Donkeys	Mules	Buffalo
<i>Arayi</i>	895	866 ⁵	-	106	8	26	968	0	194	2 ⁶	-	-
<i>Lusagyugh</i>	663	906	46	44	3	15	1,123	0	100	0	0	0
<i>Hnaberd</i>	1,612	2,324	12	173	5	0	2,558	0	244	4	0	0
<i>Kuchak</i>	1,867	767	48	58	8	49	3,580	0	134	0	0	0
<i>Total</i>	5,037	4,863	106	381	24	90	8,229	0	672	6	0	0

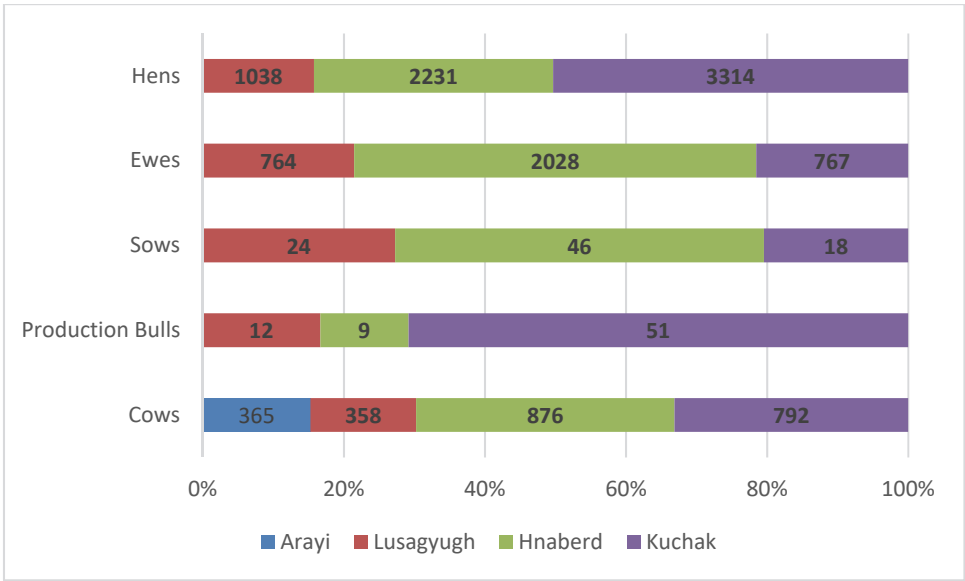
⁵ Including Goats

⁶ Including Mules

As the table shows, small cattle and cattle are of significant importance among the Pilot communities and in consequence are the main source of livelihood for rural population. The table shows, that aviculture also has a large scale here.

Several types of the animals above should be observed separately regarding their role, yield and economic importance. For example, for long-term purposes it's useful to analyze what the potential for further developments and incomes from livestock is. So, here we should pay attention to the dairy cows, production bulls, hens, etc. Data below is quite comprehensive to see this potential:

Figure 4: Animals of production importance, January 1, 2016



It is valuable to review the volume of agricultural products in comparison with the same indicator for the RA. Here livestock products are presented throughout Aragatsotn Province.

Table 4: Animal products, Aragatsotn, 2016

Products	Quantity, ths. head		Share of Aragatsotn animals in RA, 2016
	Aragatsotn	RA	%
Animals& birds for slaughter in live weight, ths. tonnes	17.9	176.1	10.2%
Milk, ths. Tonnes	88.2	728.6	12.1%
Eggs, mln. Items	61.5	659.8	9.3%
Wool,tonnes	218	1,571	13.9%

Other branches and economic activities (construction, retail trade, services, external trade, etc.).

The 3 motor highways of republican importance - Yerevan-Ashtarak-Talin-Gyumri, Yerevan-Ashtarak-Spitak and Yerevan-Armavir-Karakert-Gyumri run through the territory of the RA Aragatsotn province. The territory of the province intersects RA principal railway as well (only across the end of the West, so it hasn't any influence on economic development of the province).

Due to lack of official detailed data in communities, we have to look through a larger scale of construction, retail trade and services comparing Aragatsotn Province dynamics with the RA.

Table 5: Construction share in the RA volume, mln. AMD and %

	2011	2012	2013	2014	2015
Armenia	504,824.5	479,415.6	453,449.3	463,858.0	481,496.9
Aragatsotn	13,059.9	23,664.3	13,053.9	13,373.9	17,963.3
Aragatsotn, %	2.6%	4.9%	2.9%	2.9%	3.7%

Table 6: Retail trade share in RA volume, mln. AMD and %

	2011	2012	2013	2014	2015
Armenia	1,302,252.1	1,379,500.3	452,528.3	1,466,090.6	1,313,998.1
Aragatsotn	10,418.6	12,170.8	14,558.3	17,016.2	16,778.8
Aragatsotn, %	0.8%	0.9%	3.2%	1.2%	1.3%

Table 7: Service share in RA volume, mln. AMD and %

	2011	2012	2013	2014	2015
Armenia	840,033.4	941,280.0	988,158.3	1,090,528.6	1,144,605.3
Aragatsotn	7,413.6	8,169.1	9,343.3	8,872.7	9,185.0
Aragatsotn, %	0.9%	0.9%	0.9%	0.8%	0.8%

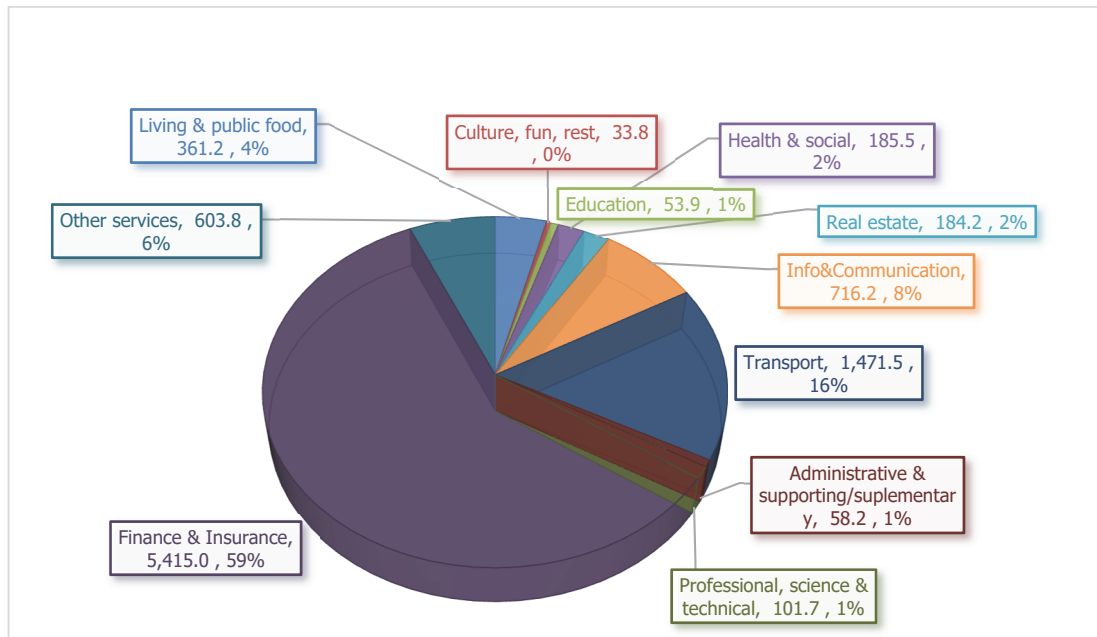
Regarding the retail trade, the latest statistics shows the following image of sales outlets in the province:

Table 8: Retail sales outlets, quantity in Aragatsotn

	2011	2012	2013	2014	2015
<i>Shops</i>	134	127	128	190	250
<i>Stalls</i>	229	238	238	243	251
<i>Agricultural production markets</i>	3	2	2	2	2
<i>Consumer goods markets</i>	1	1	1	2	2
<i>Other retail outlets</i>	63	67	68	69	57
Total retail outlets	430	435	437	506	562

Having a look at the distribution of service types and directions provided in Aragatsotn Province, it's worthy to observe that the greatest share in overall turnover in the field belongs to finance and insurance products and transport services.

Figure 5: Service distribution by types in Aragatsotn Province as Of 2016, mln. AMD and %



Export from Aragatsotn Province in 2015 makes 6,836.4 mln. AMD (only 0,96 % of total export from the RA), total export from the RA makes 705,116.8 mln. AMD.

Table 9: Export volume and share in the RA⁷, mln. AMD and %

	2011	2012	2013	2014	2015
<i>Armenia</i>	489,032.3	550,560.0	594,392.0	632,840.4	705,116.8
<i>Aragatsotn</i>	7,774.5	5,022.6	17,562.5	21,307.5	14,311.3
<i>Aragatsotn, %</i>	1.6%	0.9%	1.2%	1.4%	1.0%

Import in Aragatsotn Province in 2015 makes 21,826.3 mln. AMD, total in the RA 1,500,295.3 mln. AMD.

Table 10: Import volume and share in the RA, mln. AMD and %

	2011	2012	2013	2014	2015
<i>Armenia</i>	1,482,396.3	1,638,843.6	1,705,848.2	1,735,308.6	1,500,295.3
<i>Aragatsotn</i>	19,358.0	20,904.7	30,634.5	32,040.6	21,826.3
<i>Aragatsotn, %</i>	1.3%	1.3%	1.8%	1.8%	1.5%

Comparing other important indicators of economy in Aragatsotn Province towards the RA figures statistically, we notice that consumer price indexes in comparison for 2015 with 2014 year in Aragatsotn province make 103.8 %, out of which consumer price indexes of food items (including cigarettes and alcohol), in 2015 in comparison with 2014 make 104.2 %, setting Aragatsotn in the 1st place in the RA.

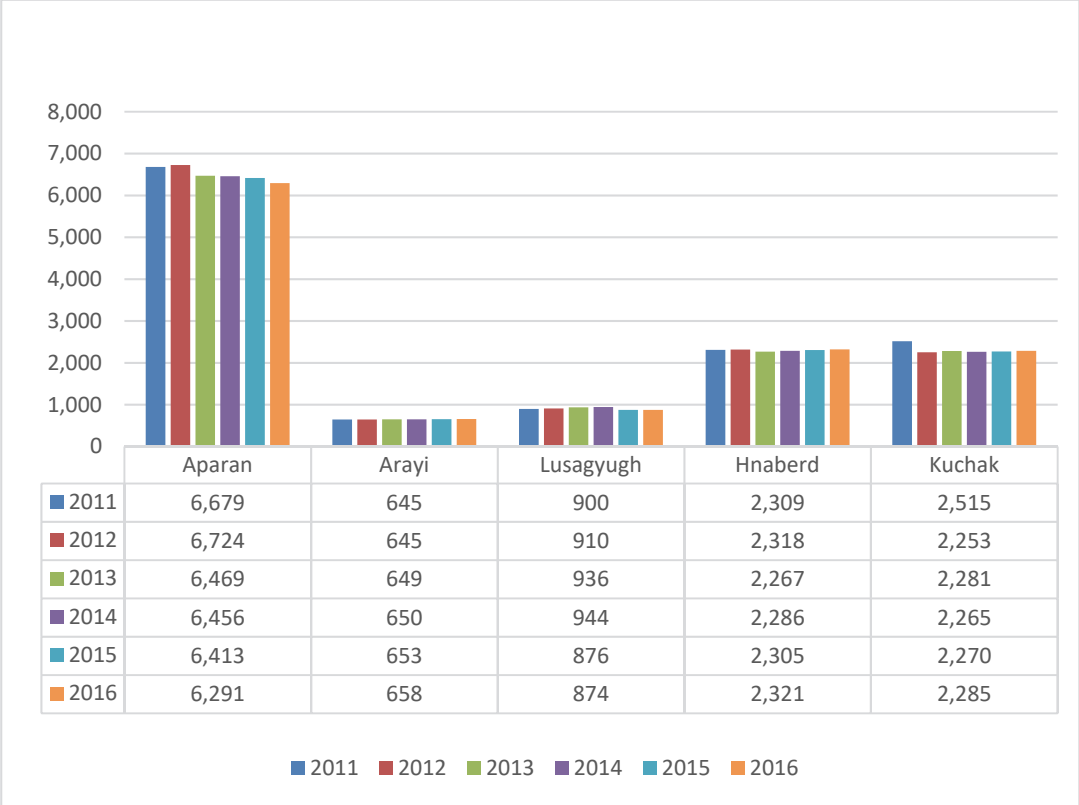
Consumer price indexes of non-food items, in 2015 in comparison with 2014 year, Aragatsotn 102.5 %. Indexes of tariffs of services rendered to the population 2015 in comparison with 2014 year in Aragatsotn Province make 102.5 %,

⁷ Does not include physical persons' trade

3.2 Demography, education, employment, migration, living standards, income and expenses, dependence on natural resources for survival and livelihoods, energy sources and related fields (statistics combined with crosschecked actual data upon)

Demography. Considering Aparan region as a focus for our current study, let’s see the overall description of its population and dynamics through the years of 2011 – 2016 (including Aparan town⁸).

Figure 6: Population dynamics in the region, 2011 - 2016

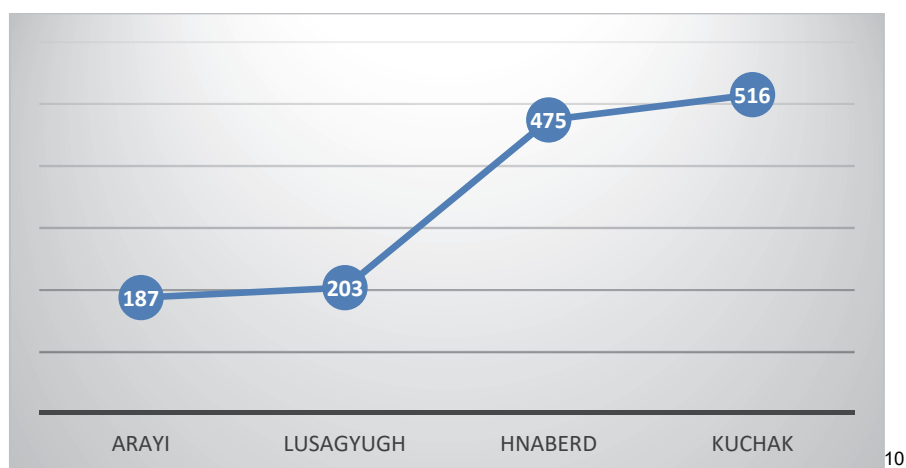


It’s worth mentioning that the dynamics is based on statistical data from Armenian National Statistics Service, where slight differences⁹ can be noticed compared with the primary data obtained in the communities directly.

The data on number of households in the Pilot communities is presented in two main criteria, informing us on the total number of registered households and on actually available ones per community. This data is also based upon primary sources, such as the latest updated registers of the communities and settlements included.

⁸ Further on data may be based mostly on Pilot communities, not including Aparan town
⁹ Population numbers sometimes differ, which can be reasoned by the rigid and sometimes incorrect calculations in community registers

Figure 7: Number of households in the Pilot communities, as of January 1, 2016



Regarding the demography, it's also interesting to look through the age and gender groups per community which can be useful in estimating and distributing potential targeted activities of any launching project there. Information is presented in shares towards the total number of population due to the lack of official registers in the mayor's offices.

Table 11: Demography in the Pilot communities, age and gender groups, 2016

Out of total population	Below work-efficient age, %	At work-efficient age, %	Above work-efficient age, %	Male	Female
Arayi	24	51	25	51	49
Lusagyugh	25	63	12	48	52
Hnaberd	36	52	12	48	52
Kuchak	27	62	11	49	51
Total	100 %	100 %	100 %	100 %	100 %

Education. Regarding education, there are secondary schools, kindergartens, culture houses, libraries and music and art schools in the region, most of which need reconstruction (described above in the Environment chapter). Here we also have the overall description for the whole Aragatsotn province, stating the distribution of educational institutions by their type, basic secondary school data and higher education quantitative data in comparison with total numbers in the RA.

Table 12: State secondary schools, attendance in Aragatsotn, 2015/2016 edu. year

	Aragatsotn	RA	Comparison %
Number of pupils in schools	17,355.0	364,398.0	4.8%
Average attendance per school	142.3	253.4	56.2%
Number of classes/grades per school	11.8	13.9	84.9%
Average attendance per class	12.0	18.2	65.9%
Number of Pupils per pedagogue	6.1	9.4	64.9%
Number of pedagogues per school	23.2	26.9	86.2%

¹⁰ According to Aragatsotn official web page

As for higher education, there are no higher education institutions in Aragatsotn.

We should also pay attention to cultural life, behaviors and tendencies of the province when discussing the general indicators in educational level of the population and their social-economic activeness.

Regarding theatres, unfortunately there is not theatre in the province.

Number of attendance to libraries per 10,00 people in Aragatsotn province in 2015 makes 1,288.7 people which is lower than the average indicator in RA (1,621.7 people).

Number of athletes in sport organizations of Aragatsotn Province per 10 ths. population in 2015 makes 42,1 people, which is almost three times as low as the average indicator in the RA (136.8 people).

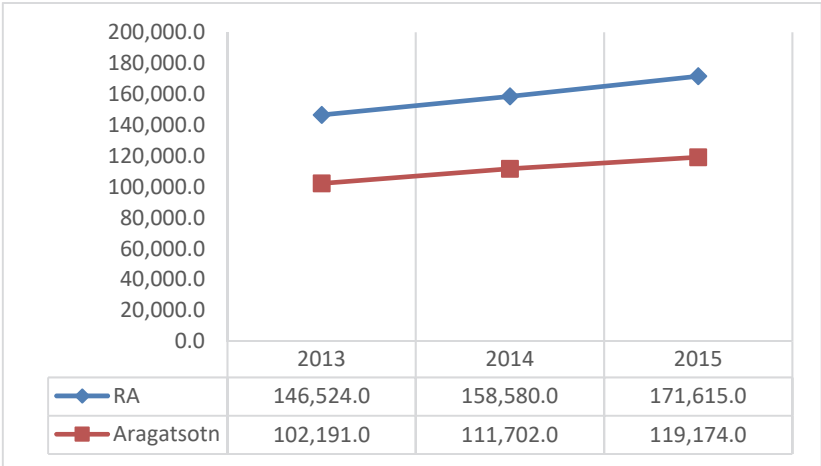
Employment. Actually, agricultural activities make a significant share in employment in the Pilot communities. However, it would be also interesting to look through the general picture of the whole region on such important indicators as unemployment rate and average nominal salary per month. Here again the statistics¹¹ comes to help us to see the picture and comparison with the RA.

Table 13: Unemployment rate in Aragatsotn by gender, %, 2014 - 2015

	2013			2014			2015		
	Male	Female	Total	Male	Female	Total	Male	Female	Total
RA	14,4	17.6	18.5	15.8	19.5	17.6	17.6	19.5	18.5
Aragatsotn	2.0	4.3	3.3	2.3	7.7	5.1	1.6	10.0	5.7

It's also interesting to watch the dynamics of the size of nominal salaries in average throughout Armenia and Aragatsotn Province for 2013 – 2015 years:

Figure 8: Nominal salary per month in average in Aragatsotn, AMD, 2013 - 2015



Migration. For migration issues direct interviews with mayors come to a basis. Considering their observations, almost in all the communities the rate of migration is quite high, the only smoothing fact is that it is seasonal, and the migrants are back to their homeland almost every winter. Based on the same observations, the main opportunity of employment or self-

¹¹ Data available for only 2014 and 2015 years.

employment in most communities is farming and livestock, along with some small-scale processing enterprises and not operating touristic facilities.

Table 14: Migration status by volume, purpose, direction and opportunities in the communities, 2016

	Migration Level	Migration directions	Migration volume, people	Migration purpose	Opportunities in the village
Aparan	High	Varied	1,000, seasonally	Outgoing work	Food and beverage enterprises
Arayi	N/A ¹²				
Lusagyugh	High	Varied	~25 %, seasonally, 30 people to Yerevan	Outgoing work	Farming & livestock, tourism
Hnaberd	High	Russia	50 % of men, seasonally	Outgoing work	Farming & livestock
Kuchak	High	Varied	320 people, seasonally, 70 out of whom to Yerevan	Outgoing work	Farming & livestock, processing enterprises

Living standards, poverty rate. Regarding living standards, recognition of poverty rate¹³ in the province is valuable.

Table 15: Aragatsotn poverty rate in comparison with the republican average, %, 2012 - 2015

	2012			2013			2014			2015		
	Poor	Out of which - extremely poor	Not poor	Poor	Out of which - extremely poor	Not poor	Poor	Out of which - extremely poor	Not poor	Poor	Out of which - extremely poor	Not poor
<i>Republican Average</i>	32.4	2.8	67.6	32.0	2.7	68.0	30.0	2.3	70.0	29.8	2.0	70.2
<i>Aragatsotn</i>	21.2	0.9	78.8	22.7	1.1	77.3	18.7	0.5	81.3	16.1	0.4	83.9

It's also worth mentioning that a significant share of rural communities mostly makes living out of agricultural products sales. However, as no officially registered figures and/or related data could be revealed either from primary, or from secondary sources, let's watch the distribution of income per capita by their sources for the whole Aragatsotn Province upon the latest statistics.

Table 16: Aragatsotn, income sources for households per capita, AMD, 2015

	Employment	Self-employment	Sales of agriproducts and animals	Property (rental fees, interest rates, dividends)	State benefits & allowances	Transfers	Other income	Total
<i>Republic Average</i>	28,800.0	4,842.0	2,674.0	115.0	9,284.0	4,698.0	1,964.0	52,377.0
<i>Aragatsotn</i>	27,206.0	1,440.0	16,578.0	117.0	10,377.0	13,510.0	428.0	69,656.0

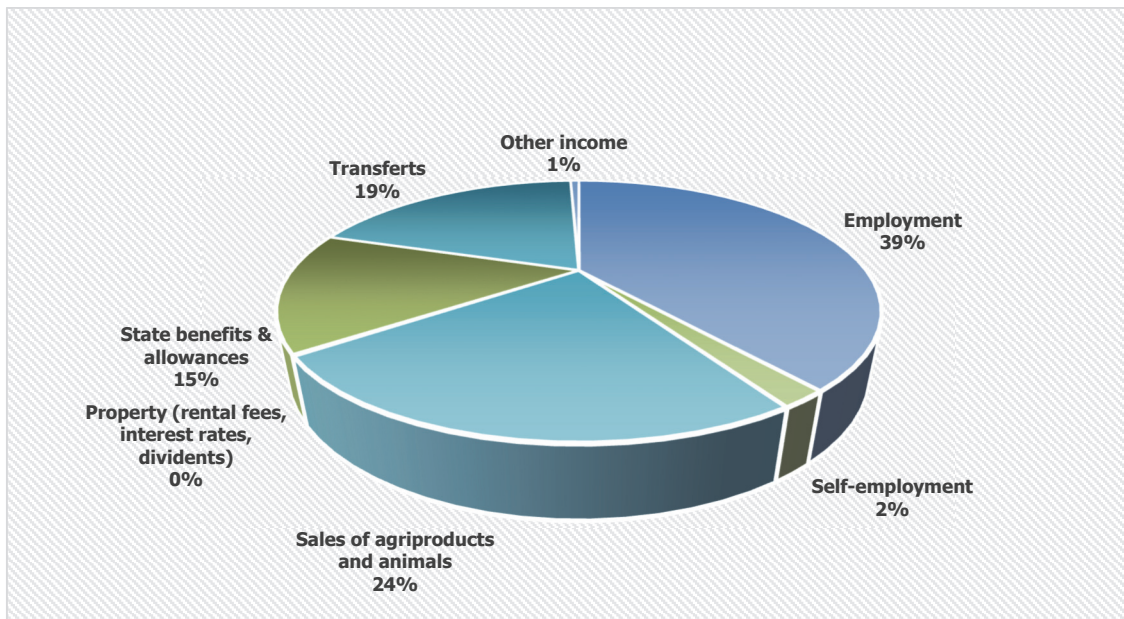
¹² No information received

¹³ Data missing for 2015 accounting year

Here we see that after wages for employment and sales of agricultural products, transfers and state benefits and allowances make a tangible share in the population's overall regular income.

The data was revealed through large-scales annual survey among households of Aragatsotn organized and implemented by regional government bodies and delivered to the National Statistic Service.

Figure 9: Aragatsotn, distribution of income by sources per capita, AMD, 2015



3.3 The operating institutions in the field

In Aparan there are 5 milk processing points. Gntunik bakery is intensively operating employing 150 – 200 people. There is also a bread production point in the town.

A college on physics and math used to be here, which later on became a military college, but again didn't operate successfully, and now a secondary specialized institution is intended to establish there.

In Arayi community there is a group of women with 15 members involved, who are busy in raspberry production (cultivation, collection, etc.). The group was established and is operating in the initiative of and within "Green Lane" NGO in 2012. The latter first established raspberry cultivation in a wire and pillar method. The project greatly contributes to increase in women's employment. The group coordinator is Heghine Kirakosyan, who is the personnel manager of Arayi mayor's office.

In Lusagyugh there is a tree nursery occupying an area of 2,000 m² where young plants are taken from for supporting afforestation project in the community.

There used to be a hostel (touristic center) in the community in the Soviet times, which is not operating currently and could create employment for 20 – 30 people.

There is a dancing educational group in the village which has not sufficient conditions for intensive operation currently and need improvement.

There are resources of construction soils and clay in the village, which are not used properly.

Green Lane project on raspberry cultivation was also tested in Kuchak community, where a group of 7 women was created, however the raspberry sort was not corresponding to the area, and the project didn't work here.

There is no meat processing point in the community, as for milk, Ashtarak Kat used to collect it, and currently Hartavan Kat is doing that.

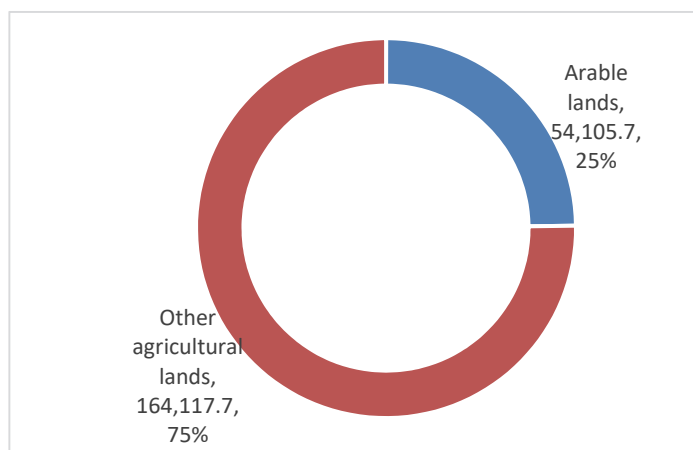
There is a clay mine occupying 45 ha in the community. In 2010 a sample of it was supposed to be taken to Karbi village as a raw material, but the project was cancelled.

4. LAND RESOURCES AND USE

4.1 Land types and use directions: description and mapping

As Aparan region with the Pilot communities is located in 1,800 – 2,100 m height above the sea level (elevation), it is the zone where 9 types of black soil can be found which are mainly rich in organic materials (4.9 – 7.5 %) and are of high suction/ water absorbing type. Here light brown soil predominates, and in higher landscapes mountainous black soils are popular, which are distinguished by their good partition of genetical horizons, their powerful profile, rich humus in their upper layers (4 – 11 %).

Figure 10: Lands of agricultural significance in Aragatsotn, ha 2016



Agricultural lands are of special importance to the province at all and make a significant share in all the land types altogether.

For recognizing land resources and distribution by their use in the Pilot communities, both statistic and primary data from the mayor's offices were applied. According to this combined data, the land in the region occupy the areas presented in Table 17. So as to make sense on urban and rural lands, lands of Aparan town are also included in the table below.

Table 17: Distribution of agricultural lands in Aparan and the Pilot communities by their use and types, ha, 2015

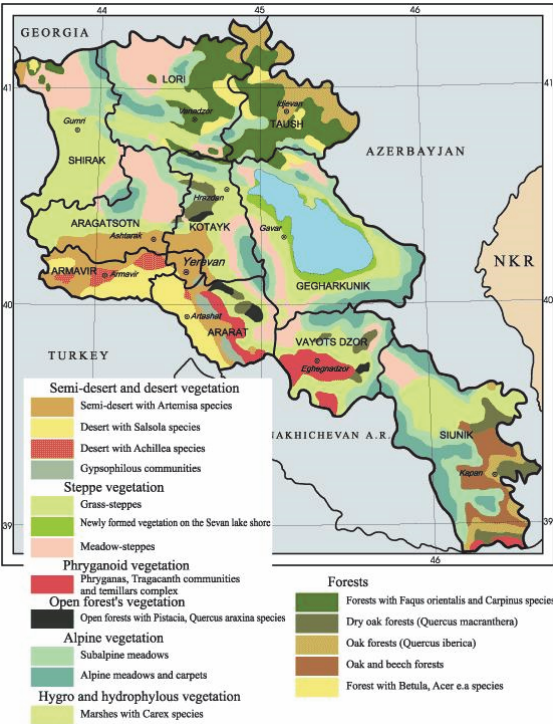
Communities	Arable lands	Hayfields	Pastures
Aparan town	38	¹⁴	415
Arayi	-	-	290
Lusagyugh	25	-	414
Hnaberd	90	20	411
Kuchak	120	-	392
Total	210	20	803

¹⁴ No data available in primary and secondary sources

4.2 Vegetation on these lands dependent on their types and influences of use (photos included)

Vegetation in Aragatsotn Province mainly consists of semi-desert with Artemisa species, grass steppe, meadow-steppe, subalpine and alpine meadows and carpets, as you can see in Picture 3. Aparan region is mostly in the meadow steppe and subalpine meadows zone of vegetation.

It's important to recognize especially land use for agricultural purposes. In the table below distribution of agricultural lands by their harvest and products are introduced:



Picture 3: Distribution of different vegetation and habitat types in Armenia

Table 18: Land use types by agricultural products, Aragatsotn, 2015

	Arable, ha		Average yield, centner/ha		Gross yield, ths. Tons		Share of Aragatsotn in gross harvest in RA, %, 2015	
	Aragatsotn	RA	Aragatsotn	RA	Aragatsotn	RA	Aragatsotn	RA
Corn and legume crops	28,563.0	201,254.0	31.8	31.8	90.8	637.9	14.2%	100.0%
Potato corps	1,729.0	33,306.0	265.0	228.9	45.8	764.5	6.0%	100.0%
Vegetable corps	1,107.0	29,078.0	316.2	334.7	40.4	10,031.5	0.4%	100.0%
Plantation	233.0	6,782.0	390.6	423.4	9.1	286.8	3.2%	100.0%
Fruit and berry plantation	6,617.0	40,582.0	162.8	104.7	95.6	386.5	24.7%	100.0%
Grape	1,699.0	17,296.0	106.5	188.2	17.9	309.2	5.8%	100.0%

4.3 Significant alterations/changes in the field

The unsustainable use of pastures and forest areas leads to erosion, degradation, desertification and loss of biodiversity in high mountain areas of the South Caucasus (key problem).

The local population who uses the natural resources of communally managed land is the main target group. Special consideration will be given to livestock farmers and shepherds, poor smallholder farmers and women.

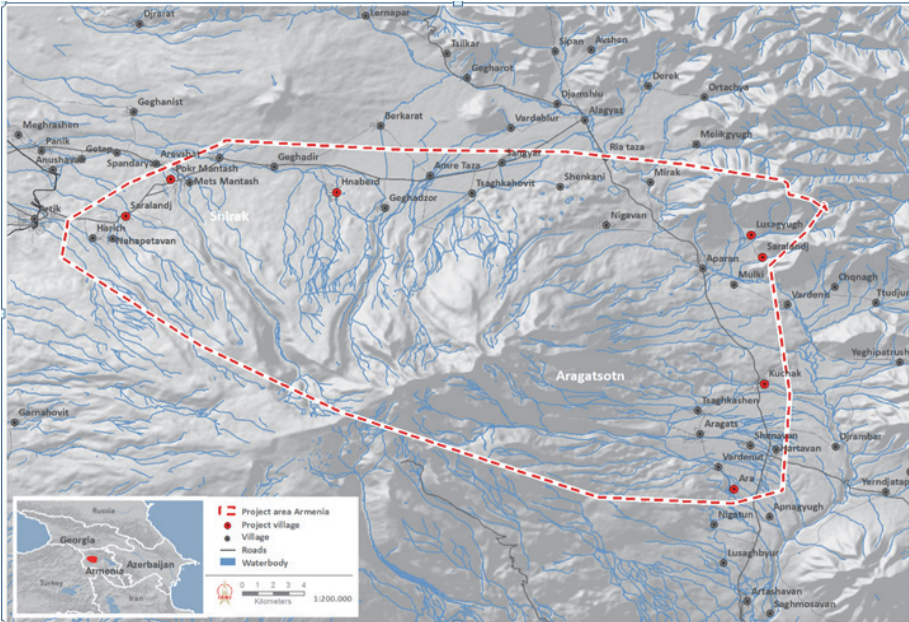
Watering of pastures was launched in 2016 in Aparan community by “Agricultural Project Implementation Unit” State Agency of the RA Ministry of Agriculture in the framework of “Community Agricultural Resources Management and Competitiveness” (CARMAC) project, which is funded in 80 % by the government and in 20 % by the community. The first phase was accomplished, and the second phase is planned for the next year. Agricultural machinery (2 tractors) has also been obtained within the same project, and now they are capable to plow the land for 30,000 AMD instead of 35,000 – 40,000 AMD as before, when they were renting the mechanism from other places/providers. Efficiency of the process has improved correspondingly, e.g. 35 – 40 ha of lands was being plowed previously, while currently the plowed area reaches 80 ha (although the whole area is 700 ha).

Lusagyugh community is a part of afforestation and integrated erosion control projects and has already had good results in this regard.

Projects for land erosion control are including Hnaberd community, and tangible changes have been stated due to specific interventions.

A cooperative of pasture users was created in Arayi community within “Community Agricultural Resource Management and Competitiveness”. Almost 61 households are involved in the cooperative.

Meanwhile, in the framework of “Integrated Control of Land Erosion in the Mountainous Areas of the South Caucasus” project, 18 ha of eroded land has been afforested and 35 more ha is fenced with the objective to apply alternative afforestation measures (natural succession, direct seeding, etc.) (out of 2,800 ha pastures in the community). Watering of afforestation plot has started since 2016, roads to pastures have been improved and stone collection is intended for the next step (see project area in Picture 4).



Picture 4: Integrated control of land erosion in the mountainous areas of the South Caucasus project by GIZ, Project Area

4.4 Existing laws and legal regulations: strengths and weaknesses, tangible gaps to fulfill

In the RA Land Legislation was passed in May, 2001 and has been applied up to date with a few improvements and changes. Later in April, 2008, the RA Law about Control over Land Use and Preservation was passed and is being applied up to date.

There is also the RA Law on Land Tax operating since 1994, directed on regulation of the rights of landowners, permanent and temporary users over the state-owned land. The rates of the tax do not depend on the income received due to land use, but mostly on the settlement types, location and productional significance.

Land is mainly owned and managed by the municipality. Forests belong to the state and are managed by Hayantar State Non-commercial Organization (SNCO).

The Decrees approved by the Government of Armenia on sustainable pasture management (dated 28.10.2010, No1477-N and 14.04.2011, No389-N) establishes the procedure for using pastures and grasslands in Armenia. The latter was elaborated mainly on the basis of the studies and analysis of perennial mean data, as well as the results of partial monitoring. It's worthwhile mentioning, that not always the above-mentioned procedures approved under the foregoing decrees of the Government of Armenia, can be justified for one simple reason; so far the condition and the degradation degree of pastures in various natural zones have never been clearly adjusted, registered and explained before. Evaluation of pasture condition, e.g. monitoring, is one of those processes that is required to ensure guarantees and opportunities for the implementation of sustainable pasture management.

5. NATURAL RESOURCE MANAGEMENT PRACTICES APPLIED IN THE PILOT REGION

5.1 Mapping of natural resources such as natural forests, pastures, water: general description and threats

As stated above, the main natural and semi-natural habitat types in the project area are: mountain steppes, meadow-steppes, sub-alpine meadows, alpine meadows and carpets, small patches of forests, and intrazonal ecosystems – wetlands and petrophilous habitats, as well as ruderal (disturbed) habitats. Steppes and meadows are the most represented habitat type.

Forests. Forests occur mainly in small patches, which dominant species are Quercus, Acer and Carpinus, etc..

Rare and endangered animal and plant species in the area are: 58 species included in the Red Data Book of Armenia (Tamanyan, 2010, Aghasyan, Kalashyan, 2010). 14 species are included in the Resolution 6 of the Bern Convention, amongst others wolf, brown bear and several bat species.

The energy crisis of the first years of independence of Armenia had had quite negative impact on the environment and particularly the forests. At that time both rural and urban population predominantly used to burn wood from forests. Although at the turn of the century and after that the relaunch of natural gas supply curb the use of firewood from forests the total area under the forests shrunk significantly currently reaching 8-9% of the country's territory.

Since 2004 forest management activities have been implemented in the forests and forest lands under the supervision of the RA Ministry of Agriculture to determine forest areas and forested lands, timber stocks, as well as to plan forest management activities for the coming 10 years. As a result of the above mentioned activities, forest management plans of "Forestry" branches of Ijevan, Sevkar, Noyemberyan, Artsvaberd, Syunik, Kapan, Sisian, Chambarak, Gougark, Dsegh, Lalvard, Jiliza, Stepanavan, Tashir, Vayots Dzor have already been developed and approved.

Forest management plan is a technical document developed in the outcome of silvicultural activities and approved for the implementation of forest management. This document gives the comprehensive evaluation of forest management and forest utilization for the past time period and determines the activities for the coming 10 years. The purpose of the forest management plan is the sustainable and uninterrupted use of forest resources in compliance with the National Forest Policy and provisions of the National Forest Program.



Picture 5: Forests in Armenia

Development of forest management plans started in Yerevan, Aragatsotn, Gyumri, and Hrazdan "Forestry" branch offices in 2009; however the aforementioned activities were ceased in 2010 and 2011 due to the absence of funding from the state budget.

Hence, there is no management plan for Aragatsotn province so far.

However, interventions for protection of the existing limited forest resources have been implemented recently.

In 2006 aerial chemical pest and disease control measures were implemented with "Arivo" chemical on 19,795 ha of infected forests of "Forestry" branches of Vayots Dzor, Kotayk, Aragatsotn and Syunik Provinces, of which 5,300 ha in Vayots Dzor Province, 2,737 ha in Kotayk Province, 2,904 ha in Aragatsotn Province and 8,854 ha in Syunik Province. Control measures were implemented primarily in the areas infected by leaf eating pests (brown tail) and green roller moth.

In 2007 highly efficient aerial chemical pest (leaf eating pests- brown tail, geometer moths) control measures were implemented with "Arivo" chemical on 24,723 mln. of forest cover, of which 5600 ha was in Lori Province, 4424 ha in Tavush Province, 7445 ha in Syunik Province, 3200 ha in Aragatsotn, 2054 in Vayots Dzor and 2000 in Kotayk.

In 2008 highly efficient aerial chemical control measures were implemented with "Arivo" pesticide against leaf eating pests (brown tail, geometer moths) and with "Baileton" chemical against diseases (oak powdery mildew) on 7700 mln. of forest land, of which 1200 ha in Aragatsotn Province, 700 ha in Kotayk Province, 1000 ha in Lori Province, 3210 ha in Syunik Province and 1590 ha in Vayots Dzor Province.

In 2012 aerial chemical control measures were implemented against leaf eating pests and diseases on 9000 mln. of forest cover, of which 2500 ha in Syunik Province, 1200 ha in Vayots Dzor Province, 2800 ha in Aragatsotn Province, 2500 ha in Kotayk Province..

In 2013 aerial chemical control measures were implemented against leaf eating pests and diseases on 8870 mln. of forest cover, of which 5810 ha in Syunik Province, 1100 ha in Vayots Dzor Province, 1000 ha in Aragatsotn Province, 960 ha in Kotayk Province.

In 2014 aerial chemical control measures were implemented against leaf eating pests and diseases on 6300 mln. of forest cover, of which 2700 ha in Kotayk Province, 1400 ha in Vayots Dzor Province, 2200 ha in Aragatsotn Province.

Aerial chemical methods of control proved to be highly efficient.

Starting from 2014 Shen collaborates with "Integrated biodiversity management, South Caucasus" regional project of GIZ implemented by ECO Consult (Germany). The project envisages controlling soil erosion through planting new forests in Aragatsotn and Shirak provinces. So far, a small nursery was established in Aragatsotn Province, totally almost 20 ha of forests were planted and fenced. Another 60 ha was prepared and fenced for further forestation.

Reforestation – planting trees on a large scale and ensuring their survival is one of the main directions to solve the abovementioned problem. Therefore, Shen took responsibility to fill that gap within its humble capabilities, donating forest and ornamental trees from its nursery to villages in Aragatsotn region along with Kotayk and Gegharkunik regions since 2010.

As for protected areas, there is only one Specially Protected Nature Area in the area of investigation – “Aragats alpine” State Sanctuary. It was established in 1959, it covers an area of 300 ha and its conservation purpose is the protection of the Lake Kari and its vicinity with alpine vegetation. In addition, the area around “Aragats alpine” (9,446 ha) was proposed as the site for “Emerald” ecological network. State sanctuary and area around it include all peaks and crater of Aragats Mountain.

Forests belong to the state and are managed by Hayantar state non-commercial institution which operates with its “branches” in all the provinces and regions throughout Armenia. They are called Regional Forestry. For regulations and improvements in the field a special

Aragatsotn Forestry characteristics and contacts are stated below:

Aragatsotn Forest Lands by Branches

No	Branch	Total Area, ha	Forest Cover
1	Aragatsotn	10,848	5,215
	Total	10,848	5,215

“Aragatsotn Forestry” branch

Address: Aragatsotn Province, Aparan

Tel: 0-252 2 46 93

Director: Vram Abrahamyan

“Aragatsotn Forestry” Lands by Sub-branches

No	Sub-branch	Total Area, ha	Forest Cover
1	Yernjatap	2,824	1,560
2	Aragats	4,402	2,700
3	Byurakan	3,622	955
	Total	10,848	5,215

Pastures. Pastures in Armenia are among the most important natural resources for livestock and are especially valued in terms of overall biodiversity. The irregular and spontaneous use of these crucial resources cause lots of root ecological issues which effect all the economy in the area in a complex way: productivity of animals, consequently yield in agriculture, consequently the prices in the field, quality of food consumed by the population, and what is scarier, the huge risk of reducing the opportunity to maintain any potential resources for the future generation or even losing them at all for already the near future.

The issue stretches upon Aragatsotn province and Aparan region in the same way and is of common importance throughout all Armenia.

To be more specific, using the available and crosschecked data upon pasture areas by regions and communities, we focused on the Pilot communities.

In Kuchak community pastures occupy 860 ha, 430 ha out of which are in the lowlands, and 430 ha is in the mountainous areas. The pastures are remote, and the animals have to pass a road of about 10 – 14 km for grazing, which, of course, effects their productivity negatively.

Some times before the roads were constructed and sanitation system was established, however they were destroyed quite quickly and need improvement again.

In Aparan the pastures occupy 2201,5 ha. Arayi has about 2,800 ha of pastures, out of which 15 ha has been planted within the Integrated Erosion Control of the Mountainous Areas in the South Caucasus, and 35 ha is fenced for natural succession of the land.

Water resources. The province of Aragatsotn is quite rich in water resources, such as reservoirs and rivers.

Water reserves mainly generate from thaw of Aragats Mountain, rainfalls and natural springs. The large rivers of the province are Kasakh and Geghadzor. There are also lots of ravines (Mastara ravine is the most famous one).

Arzni-Shamiram canal is going across the province area, as well as Talin canal is operating. The province also stands out with its richness in reservoirs.

Aparan, Halavar, Tsilkar, Nerkin Sasnashen, Davtashen, Talin, Verin Bazmaberd, Kaqavadzor, Shenik, Ashnak and Sabouchi reservoirs are located here.

Aparan reservoir is among the top ten reservoirs in Armenia.



Picture 6: Aparan Reservoir

Table 19: Aparan Reservoirs

	Volume, mln. m ³	Volume in Use, mln. m ³	Spillway Height (m)
Aparan	91	81	52,6

5.2 Experience and tendencies in of above-mentioned resources: best practices, habits and proved necessity for improvement

Aragatsotn is one of the richest provinces in natural wealth and minerals at all which have always been extracted here. The most important ones are ores of about 17 colors such as copper, molybdenum, zinc, etc., and precious metals such as gold and silver as well as a full range of non-metal minerals (construction and facing stones, raw material for basalt, storages of limestone and combustible shale, marble, granite perlite, etc.) According to state statistics for 2015, the quantity of hazardous substances emitted into atmosphere from stationary sources per capita makes 63.5 kg while average indicator of RA is 42.9 kg. In this indicator Aragatsotn is on the 4th place after Lori, Tavush and Kotayq regions (206.9 kg, 157.5 kg, 96.9 kg correspondingly). Payment for environment protection and environmental resources use per capita in the province makes 728.7 AMD, which is almost 1.4 times as low as the average indicator for the RA (1,005.7 AMD).

As for payments for environment protection and use of natural resources per organization of the province, here Aragatsotn has quite a significant share and makes 1,273.3 AMD regardless the average for the RA is 773.8 AMD per organization. Here Aragatsotn occupies the 4th place after Ararat, Vayots Dzor and Armavir provinces.

It is quite encouraging that Aragatsotn has one of the lowest indicators for disclosed violations of environmental protection legislation, 10.7 units per 100 ths. people in the province, which is far below the average indicator of the RA (29.0).

Regarding land use or pasture use, based upon the direct interviews with the mayors and responsible specialists, there are no special habits or rules among the rural population. They are used to irregular and unorganized approaches in grazing, watering or other activities related to the natural resources.

There is also the RA Law upon Forests passed in 2005, through which main regulations of the field take place.

6. DEVELOPMENT PROJECTS TARGETING PILOT AREAS FUNDED OR/AND IMPLEMENTED BY INTERNATIONAL AND NATIONAL ORGANIZATIONS FOR THE PERIOD OF 2011 – 2016 YEARS AND ONGOING PROJECTS

6.1 Short descriptions of projects by implementing/funding organizations, targeted areas and running status (either completed or ongoing)

In Aparan currently (in 2016) “Pasture watering” project under CARMAC is implemented funded by the government in 80 % and by the community in 20 %. The first phase launched in 2016, and the second phase is planned for the upcoming year. They also have obtained 2 tractors, which enables them to plow the earth for a cheaper price, than they used to pay for the service before.

Due to the cooperation with “Kamrjak” charitable organization some improvements have been implemented in the community so far, such as gasification, reconstruction of sewerage lines and systems. Annually tree planting is organized in the village.

In the frameworks of “Pure Energy and Water” lighting improvement was implemented in the village.

Arayi village is currently targetted «Integrated Control of Land Erosion in the Mountainous areas of the South Caucasus» project, which launched in 2015. Currently watering procedures are being implemented, roads to the pastures have been improved and stone collection is planned to be done in the nearest future.

Lusagyugh, Hnaberd and Kuchak are also a part of the above-mentioned project, and the planting of pastures, erosion control and other related intervention are also targeting this community and in progress currently.

School and road construction projects are actively running in Aragatsotn Province.

6.2 Best and worst practices: success stories and lessons learnt

During primary interviews with the community mayors, success and failure cases of intervening projects in the Pilot communities were discussed and discovered.

One of the most significant failures according to them is not exploiting the natural minerals, stone reserves and all the other valuable resources which the province and the communities are granted with.

As stated in the chapters above, mines of gold, clay, limestone and other distinguishing resources exist throughout all the province, and in case they were used rationally and in their full power, lot's of soci-economic issues would be solved, such as employment, migration, culture and tourism.

7. Conclusions

Summarizing the data collected, analyzed and covered in this report, Aragatsotn Province along with lots of obstacles on the way of development in socio-economic life, is also granted with numerous opportunities. Among them is little distance from the capital city of the RA, Yerevan, richness in natural resources, historical and cultural monuments, the multifunctional road crossing the region territory, as well as hospitable and hard-working people with bright ideas.

Regarding strengths of the targeted region with the Pilot communities, manufacturing is the main industry branch, especially including food and textile production.

As for agriculture, both livestock and horticulture are developed here. However, due to irregular and irrational use of natural resources such as pastures, lack of sufficient forest resources, ecology is continuously deteriorating and making local and international organizations care for the situation and take measures to prevent early degradation of the resources as well as putting agricultural production under high risks. Aragatsotn Province, especially Aparan are short of green areas such as forests, that is why no specific Forestry Management Plan can be achieved Hayantar SNCO. Here it's very essential to continue the activities of forest areas protection and planting nurseries along the area as much as possible.

Another fact shows that not only vegetation and land resources are used in a non-systemized way, but also mineral resources, for which the province has a huge potential and which can become another business card for the province economic increase and stirring.

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15. Community Registers of Livestock Data

9. Appendices

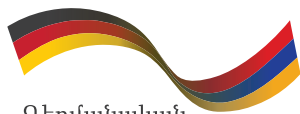
APPENDIX 1. Field Work: Guidelines _ Aparan Region

	Interviewee (First Name, Last Name, Position)	Mobile _____ E-mail _____ Interviewee Contacts		Checklist for communities				Checklist for the region
		Info source/ Informant	Refer to the period of	1. Arayi	2. Kuchak	3. Lsagyugh	4. Hnaberd	
	Info type/ Method							
Data required								
1. Actual and registered numbers of households per community separately and per region totally	Hard copies of household journals	2011 – 2016 (including latest updates up to November, 2016)	Mayors and Municipality					
2. Maps of lands, pastures, natural resources and any type of map related to environmental, land resources and natural resources in the in case available (mayors usually have them hanging in their rooms)	Scans/photos + hardcopies of guidebooks for maps (if available)	2015 – 2016 (latest updated versions)	Mayors and Municipality					
3. Maps of lands, pastures, natural resources and any type of map related to environmental, land resources and natural resources	Detailed interview + Scans/photo, figures, verbal description or charts (if available)	2011 – 2016, Significant changes and facts	Mayors and related staff, Municipality for the region					
4. Actual data on migration status and directions per community separately and region	Interviews and hard copies	2011 – 2016, Latest updates	Mayors					

5.	Livestock quantity per community/ region (including average per household); Small cattle (sheep and goats) quantity per community/ region; Grazing habits in the community/region	Hard copies of journals; Interviews	Latest updates up to November, 2016, Variations during 2011 - 2016	Mayors' office, Mayors and responsible staff				
6.	Key improvements and activities, supporting projects for land use and pasture management for livestock and small cattle	Interviews, lists & descriptions, quantity indicators if available	2011 – 2016, latest updates, ongoing and planned ones	Mayors and responsible staff				
7.	Key projects for land use	Interviews, lists & descriptions, quantity indicators if available	2011 – 2016, latest updates, ongoing and planned ones	Mayors and responsible staff				
8.	Projects for water exploitation in agriculture, both for livestock and small cattle (not in deep)	Interviews, lists & descriptions, quantity indicators if available	2011 – 2016, latest updates, ongoing and planned ones	Mayors and responsible staff				
9.	Projects for water exploitation (not in deep)	Interviews, lists & descriptions, quantity indicators if available	2011 – 2016, latest updates, ongoing and planned ones	Mayors and responsible staff				
10.	Innovative services/ products in the communities/region developed and established by projects (cross –check if necessary)	Interviews with notes/ remarks ¹⁵	2011 – 2016	Mayors and responsible staff				
11.	Special cases, success and/or failure stories of projects in the area, tangible impacts	Interviews with notes/ remarks	2011 – 2016 or beyond if necessary/ important in terms of	Mayors and responsible staff				

¹⁵Proof documents/hard copies are desirable in case available

				influences	staff								
12.	<p>Please mention women's involvement in the following fields in percent (or how many women out of 100 people): a) animal/livestock care and feeding; b) milk/diary production; c)meat/processed meat production, d) Milk sales, e) Meat/processed meat sales, f) Farming/agriculture/land procedures, g) Horticulture, h) public/cultural field; i) state or private companies and/or projects; j) Other fields (make specific notes)</p>	Interviews with notes/ remarks	Current situation, specific evolutions and variations (2011 – up to date)	Mayors and responsible staff (the most informed person)									
13.	<p>What need or lack do you see/notice for further development of the community in regard to: a) Employment, education/professional knowledge; b) land resources/use; c) Natural resources; d) Public/cultural activities; e) Other fields (make specific notes)</p>	Interviews with notes/ remarks	Current situation, specific evolutions and variations (2011 – up to date)	Mayors and responsible staff (the most informed person)									



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