



# ADVANCED RURAL DEVELOPMENT INITIATIVE (ARDI)

## COMMUNITY COMPETITIVENESS ASSESSMENT

### DEBED



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## INTRODUCTION

This report presents the results of the community competitiveness assessments conducted in the framework of the Advanced Rural Development Initiative (ARDI) program financed by the United States Agency for International Development. The ARDI project is implemented by Fuller Center For Housing Armenia (FCHA) in cooperation with Heifer International Armenian Branch Office (HA). The assessments are conducted using the methodology developed by HA. This is a part of series of assessments conducted in 20 rural communities.

ARDI sets out to increase rural employment by tackling constraints to rural economic development of communities in the Syunik, Vayots Dzor and Lori Marzes (provinces) of Armenia. The project forms partnerships with local governmental and non-governmental organizations (NGOs) to effectively and efficiently enhance value chains and increase incomes through participatory planning. ARDI builds the capacity of institutions and communities, promotes small businesses development and entrepreneurship and invests in select sustainable infrastructure and enterprise projects.

In the framework of the project 20 rural communities undergo community assessments which are aimed to identify the competitive advantages of target communities and high potential value chains in these areas. The evaluations are based on HA's Community Strategic Development Model (CSDM) Methodology and include strong community involvement. Based on the results of the community competitiveness assessments, 12 rural communities are eventually chosen for programmatic interventions and direct investment.

The community competitiveness assessments help us understand what resources a community has, how effective the community is in capitalizing its resources and evaluate the untapped potential of community to leverage its resources. Assessments also involve inventorying of all community assets including physical infrastructure and evaluations of the community environment for economic development, which we refer to as "enabling environment". As a result of the assessments a thorough image is created of the resources and capacities of a specific community.

The community competitiveness assessments and subsequent selection of communities in the framework of the ARDI program will be followed by more in-depth value chain assessments. These assessments will focus on the three main value chains targeted by the ARDI program namely dairy, fruit and rural tourism, and will identify the specifics and the potential of each value chain to create employment opportunities and community economic growth in targeted community clusters.



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# 1. METHODOLOGY

Traditional community development approaches have often focused on community deficiencies and less on community strengths which often reduced the impact and effectiveness of these initiatives.<sup>1</sup> Such an approach often also leads to narrow targeting of very specific community problems while missing more systematic solutions that may produce more sustainable and effective outcomes.

With this in mind, Heifer Armenia (HA) developed the Community Strategic Development Model (CSDM) which is a unique approach to community development, combining the strengths of asset-based community development approaches with more traditional problem identification methods. Such a holistic approach allows identification of solutions that address existent issues effectively through factoring in the specific strengths of a community. Being fully participatory, HA's methodology allows:

- Effective collection of information on community resources and needs
- Identification and addressing/utilization of actual community problems and strengths, while avoiding the “perceived” vs. “real” problem trap
- Bottom-up community-driven development process along effective top-down planning approach and institutional and community capacity building

HA's model involves four distinct steps, which are logical and organic continuation of each other. These steps facilitate the process of taking the communities from strength and problem identification, assessment of economic development enabling environment, strategizing community development patterns, professional assessment of those patterns in terms of economic feasibility and environmental impact, to development of specific projects and implementation.

The first step of the CSDM model involves Community Competitiveness Assessments (CCAs) which form the primary focus of this report. For the CCA's a series of thorough workshops are conducted which are led by external facilitators and include representative focus groups from the community. The focus groups are formed from 10 to 12 people from the community, who represent different interest groups including local governance bodies, schools, business sector, farmers etc. This enables capturing a broad information base with different perspectives. The four steps of the model are as follows:

- Assessment of Capacity/Resources and Enabling Environment
- Assessment and mapping of community Strategic Direction/Development pattern
- Development and initiation of specific projects
- Management and evaluation

As a result, CCAs involve discussion, analysis and inventory of community capacities and resources, such as human, physical, capital, natural, financial resources, explores Health, Education, Knowledge, Skill, Ability (KSA) capacities of the community, as well as main (previous and current) production patterns, employment situation, infrastructure conditions

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<sup>1</sup> McKnight, John L. and John P. Kretzmann. 1993. Building Communities from the Inside Out: A Path Toward Finding and Mobilizing a Community's Assets. ACTA Publications: Chicago.

and major projects implemented in the community by Governmental and Public organizations.

Once the *status quo* of community resources and capacities is identified the focus group evaluates utilization level of these resources as low, medium or high. This step identifies how efficient the community is in capitalizing community resources and identifies the potential of the community to leverage and capitalize further on these resources.

Assessments also focus on the enabling environment for economic development in the community. This is a crucial point in community competitiveness assessment process, as the environment (government and policy and ability of the community to reach other) is an overarching issue which directly influences all aspects of community development. Assessment of the environment is done through scoring with scores from one to five, “one” being the lowest and “five” the highest possible score. The scoring is done on selected features which can describe the level of environment supportiveness for community economic development. The features focus on variables, such as local government interest in strategies for community economic development, existing policies and their implementation, interactions between local government and business, existence and supportiveness of specialized economic and business support structures and also the (geographic) position of the community to play a positive role in the region. Communities that score high on these features are considered having enabling environment and having increased competitiveness and low risk for economic development initiatives.

As a result of the assessments a thorough image is created of the resources and capacities of a specific community. Communities that score high on the evaluated areas are considered competitive and communities which score high on enabling environment and score low in resource utilization are considered for economic development interventions and projects. This cross-referencing and cross-assessment allows better targeting of communities where ARDI interventions can have higher impact. This report presents the findings of community competitiveness assessment on Debed community.

## 2. COMMUNITY PROFILE

Debed lies in the picturesque gorge of the Debed River. The community was established in 1857 and is positioned close to the physical border between Armenia and Georgia in the very green Lori Marz/province. The community is located in a mountainous area on an altitude of approximately 980-1080 meters above sea level.

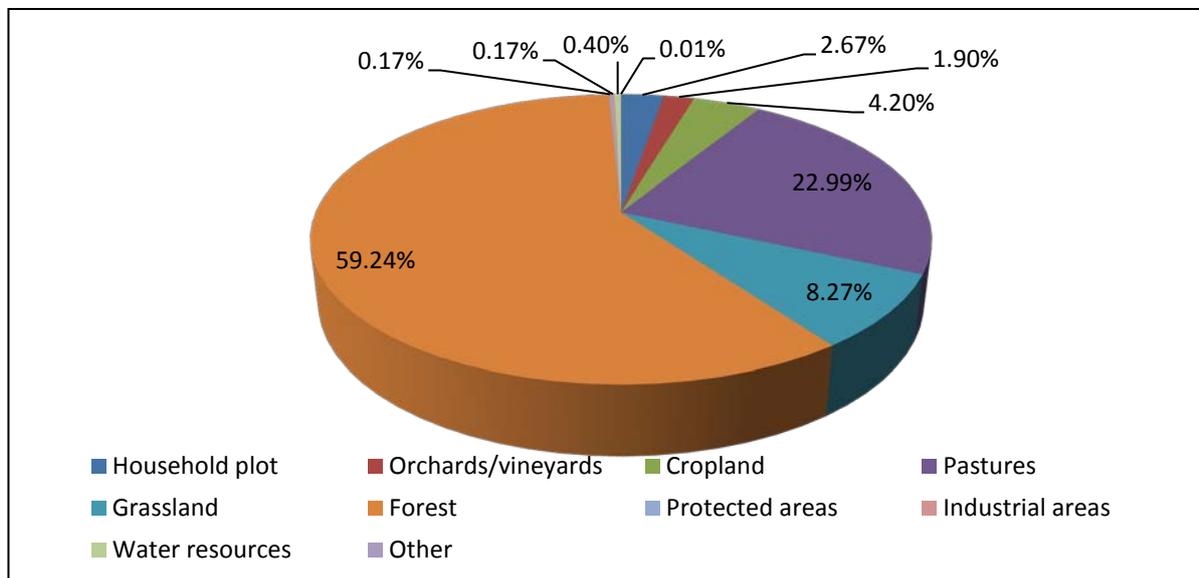
Debed has a rich history and is surrounded by numerous historical monuments. The current name of the community Debed derives from the Debed River passes by the community. Previously the community was named Khachi gjugh (this stands for Village of Cross in Armenian) and Alerex. The village was called Khachi gjugh due to abundance of crosses around the village.

Debed has a relatively mild climate where winter lasts about 140-160 days, and the annual average air temperature is +8 C. Absolute minimum winter temperature is around -28 C and the maximum summer temperature is about +35 C. The average annual rainfall in the community is around 660 mm.

### 2.1. Community Territory

The total surface area of Debed covers an area of 3025.37 ha of land which includes various land classifications. The official classifications of the community land as registered in the community register are presented in the following chart.

**Figure 1** Community land Classification



**Source:** Debed Community Land Register

A dominant share of Debed's territory involves forests which make up about 60 percent of the total community territory. The remaining two large land classifications are pastures and grasslands taking about 23 and 8 percent or 800 ha of the land respectfully. The make-up of Debed's territory in particular the large share of forest, pastures and grasslands have significant influence on the Debed's development potential and economic activity.

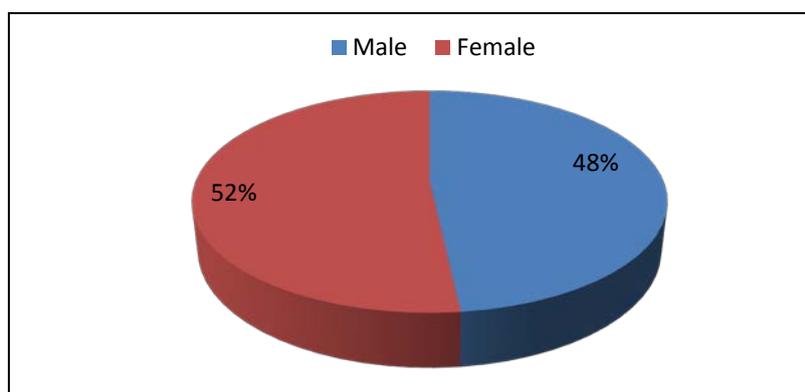
In that regard, it is important to notice that on average 1.89 ha of pasture or grass land is needed for provision of adequate fodder base for one cow in Armenia (taking into account

average yield of one ha of pasture/grass land).<sup>2</sup> Debed has an *animal to pasture ratio* of 2.4 ha which is well above the minimum required land area per animal. This points towards Debed's potential to supply fodder for a larger number of animals in case of increased livestock headcount in the community.

## 2.2. Demographic Profile

Currently Debed houses 284 families and the community has a *de facto* population of 893 residents of which 431 are male and 462 are female.<sup>3</sup> If we take into account the population of the community in 2001, which was 899, the total population of Debed has remained stable during the previous decade.

**Figure 2** Gender Classification of the community



**Source:** CCA Workshop Data - Heifer Armenia Calculations

About 27 percent or 240 people of Debed's population are young individuals, aged between 15-29 years old. This is a quite high percentage compared to the Lori Marz average as Marz level statistics reveal a 22 percent population share in this age group. The Table 1 presents the age segmentation of young population groups at community and Marz level in more detail.

**Table 1** *De facto* Population by Age (number and % of total population)

	15-19	20-24	25-29
Debed	84 - 9%	88 - 10%	68 - 8%
Lori Marz	9916 - 9%	7297 - 7%	6040 - 6%

**Source:** CCA Workshop Data - Heifer Armenia Calculations and NSS data<sup>4</sup>

As presented in the table above, the share of all three age groups are equal or above Marz level average for rural population, specifically the 20-24 age group. The relatively high

<sup>2</sup> Sahakyan Razmik, Productive Pasture Management training Material, Community Agricultural Resource Management and Competitiveness (CARMAC) Project

<sup>3</sup> Heifer Armenia database of official statistics provided by community centers.

<sup>4</sup> National Statistical Service of RA (2003), Results of 2001 Population Census OF RA (Figures of Marz Lori), available at: [www.armstat.am](http://www.armstat.am)

number of young individuals in the community will allow planning and implementation of youth specific (long term and sustainable) interventions by the ARDI program.

### 2.3. Economic Profile

Results of community assessments point that livestock breeding; beekeeping and horticulture are the main economic sectors of Debed community. Community members may have small irregular employment/income from other sources/sectors which are not covered in this section.

As presented in Table 2, the total average output of the Debed in the Livestock breeding sector is 600 tons of milk and 30 tons of meat per year. Although there is abundant production of milk in the community (671.9 liters of milk per capita), the total sales of milk and dairy products does not exceed 50 percent of the production. This results in an overall monetary output of about 60 mln AMD per year generated by sales of raw milk. Next to milk, Debed's farmers also very much focus on meat production as about 30 tons of beef is produced in the community annually. Compared to raw milk, community member are much more successful in selling meat as about 70 percent of the produced meat is sold, generating about AMD 52.01 mln per year.

**Table 2** Main Agricultural Outputs of Debed

Economic Sectors	Annual Agricultural output	Percentage Sold	Monetary Output (mln AMD)*
Livestock breeding	Milk 600 t – Meat 30 t	50% – 70%	60 – 52.01
Beekeeping	5 t	70%	10.5
Horticulture	460 t (apples 240, pears 100, plums 120)	5%	20.0

\* The output calculations are based on average (retail) sales prices of specific products and reflect actual prices. AMD prices per kg/l: milk 200, beef 2,477, honey 3,000, apples 100, pears 100, plums 50.

**Source:** CCA Workshop Data - Heifer Armenia Calculations

The community also has about 416 beehives which altogether produce about 5 tons of honey annually. Honey is also one of the products that community members sell relatively easy as about 70 percent of the output reaches markets. This generates a monetary output of about AMD 10.5 mln per year for the community.

Debed produces a large quantity of fruit which altogether adds up to 460 tons of fruit production annually. The main types of produced fruits in Debed are apples, pears and plums with 240, 100 and 120 tons production of each type respectively. The production is however hardly sold and is mainly used internally or as fodder for animals. The specifics of the fruit value chain are described in more detail in chapter 3.

Having in mind the considerable per head production volumes in both milk and fruit sectors these sectors may have significant potential for development in Debed. More in depth value

chain analysis will help us understand the specifics of these two value chains in Debed and their potential to boost economic development in the community and surroundings.

To identify possible alternative economic development direction, focus group members were also requested to highlight possible alternative economic sectors for their community which currently are not tapped into adequately. These sectors provide further opportunities for the community to capitalize existing resources, boost entrepreneurship and eventually generate higher community output. The following sectors were identified as high potential alternative sectors by community members:

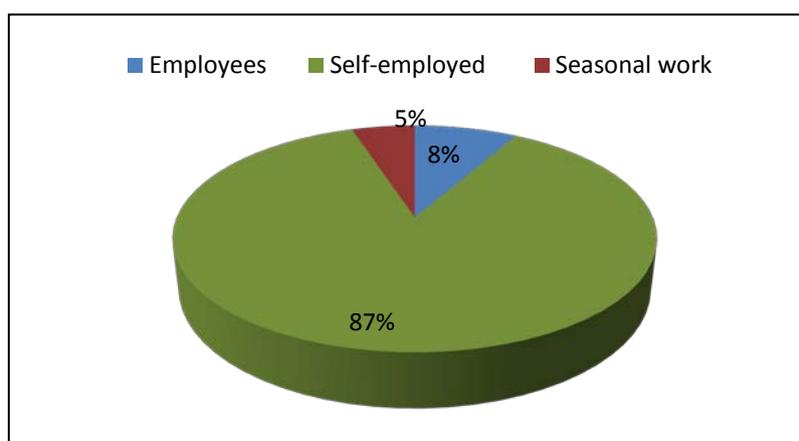
- Fish Production
- Rural Tourism
- Stone mining

The Debed River is rich of natural food for fish and is renowned for its fresh water fish quality. The geographic location of Debed community therefore provides a favorable environment for fish breeding and may still has further potential for growth. Moreover the impressive nature of the community and the river attract thousands of visitors to the community and its surroundings. Yet possibilities of this sector are again not fully utilized as there are no places for the visitors to stay and no additional hospitality services are offered such as restaurants, hot water spas etc. A more detailed elaboration on Debed's tourism sector is provided in chapter 3. The region is also rich of mineral reserves and is renowned for the quality of available stone and community members believe that this sector also still has potential for growth.

## 2.4. Labor Force and Employment

Currently Debed has a working age population of 595 people (de facto population between 16 and pension age 64). Forty nine individuals or only 8 percent of this group have permanent employment; this excludes the number of people who are self-employed and mainly involves civil servants and those who receive regular salary from private institutions/organizations.

**Figure 3** Occupation of Working Age population

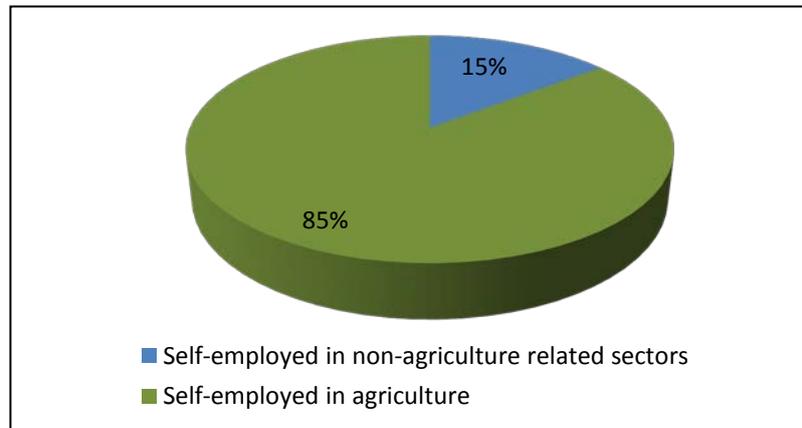


**Source:** CCA Workshop Data - Heifer Armenia Calculations

The remaining 5 percent of the working age population is engaged in seasonal work which mainly involves seasonal work outside of Armenia. The community is therefore mainly reliant

on self-employment and entrepreneurship as there are no other job opportunities available. As illustrated in the figure above, 516 individuals or 87 percent of Debed's working age population is self-employed. Of this group 75 individuals are occupied in non-agriculture related and 441 are self-employed in agriculture related fields of occupation (See Figure 5).

**Figure 4** Direction of Self Employment

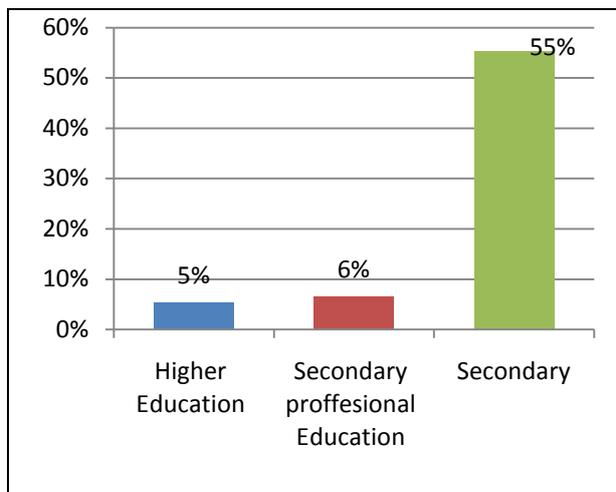


**Source:** CCA Workshop Data - Heifer Armenia Calculations

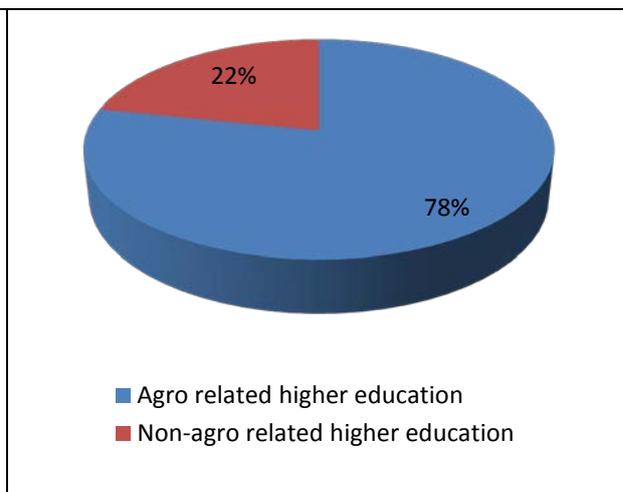
Vast majority of the community population is therefore self-employed in the agriculture sector. Yet, results of community consultations reveal that only a small share or 20 percent of the self-employed in agriculture have sufficient access to buyers in terms of regular sales with appropriate volumes and so the remaining majority is often involved in subsistence farming. The current excess agricultural production capacity provides Debed with great potential for economic development in case the community is able to breakthrough barriers to market entry and realize market penetration.

In terms of Education, around 55 percent of the population in Debed or 494 people have completed secondary education, and 6 percent completed secondary professional (college) and or university education. Compared to country educational levels Debed lies below country level average in terms of higher education levels.<sup>5</sup>

**Figure 5** Community Education level



**Figure 6** Field of Higher (Professional) Education



**Source:** CCA Workshop Data - Heifer Armenia Calculations

<sup>5</sup> National Statistical Service of RA (2012), Statistical Yearbook of Armenia, 2012, available at: [www.armstat.am](http://www.armstat.am)

As presented in the figures 5 and 6, Debed has considerable human resources in both agriculture related and non-agriculture related fields. Of the population with professional education (secondary professional education and or higher education) about 22 percent has agriculture related education and the remaining 78 percent is educated in non-agriculture related fields. People who have non-agriculture related education are mainly educated in the fields engineering and finance. The latter is particularly important for setting up/development of businesses and/or rural cooperatives where adequate financial management is crucial.

**Table 3** Experts In non-agricultural and agriculture related fields.

Non-agricultural related	Number of Experts	Agricultural fields	Number of Experts
Finance	5	(Milk) technicians	1
Engineering	6	Engineering	6
Management	0	Management	10
Tourism	0	Veterinarian	10

**Source:** CCA Workshop Data - Heifer Armenia Calculations

The community has access to a quite large number of veterinarians and people with agro management related education and expertise namely 10 individuals in each of these fields. Specifically the abundance of veterinary resources is significantly important for the development of a healthy cattle and animal husbandry in the community. The remaining of those with agriculture related educations are specialized in agro technology and agro engineering.

## 2.5. Environmental Situation

This sub section of the assessment is mainly aimed at evaluating the exposure of the community to various kinds of environmental threats. Community members were given the opportunity to highlight the main threats that currently threaten the environment of the community and evaluate the impact level of these threats on Debed's development. Focus group members highlighted the following issues as the main factors threatening the environment of the Debed:

- deforestation
- waste management
- hydropower station that impacts the river flow
- sewage that is released into the river

As already touched upon, Debed has a vast forest area which is considered a large resource for the community. Yet, the low buying power of community members and the relative affordability of wood compared to natural gas and electricity as energy source for heating has enhanced (danger of) deforestation in Debed and the region as a whole.

Community members also highlighted waste management as an existent environmental issue as currently there is no organized waste management system in the community that

gathers and handles community waste. This issue along with the sewage problem might be infrastructure related project that could be targeted by the ARDI in case Debed is selected for further interventions and addressing of these interventions prove to be feasible in the framework of the ARDI program.

The actual economic impact of these threats on Debed development was evaluated by the respondents to be limited in the short term as these threats do not directly impact the economically viable sectors of the community yet on the long term the impact of these issues can be large.

### 3. COMMUNITY RESOURCES

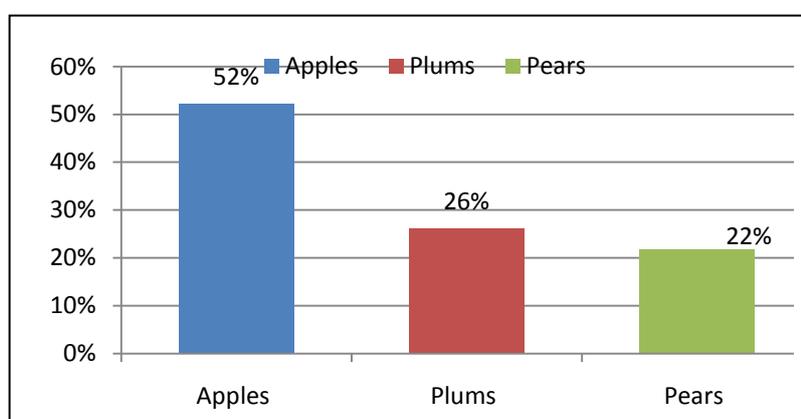
This section of the community assessments focuses on the resources and capacities of target communities in the three main target sectors/value chains of the ARDI program. These target value chains involve the Dairy, Fruit and Rural Tourism value chains. The results presented in this sub-section will allow us to narrow down the focus of community assessments and evaluate the potential of ARDI specific investments in a community or community cluster.

The assessments also involve evaluation of community infrastructural resources. This will include inventories of community infrastructure in terms of existence and condition of community infrastructure such as drinking and irrigation water systems, community and intra community roads, educational cultural and community governance buildings, community centers, IT and communication infrastructure, leisure and sport facilities, agricultural resources and technologies such as anti-hail systems and other infrastructure. An overview of the existent infrastructural assets of the community is provided in the APPENDIX 2.

#### 3.1. Fruits sector capacity

As discussed already in Debed's Economic profile, the community produces a large quantity of fruit. Despite the fact that average fruit production annually reaches about 460 tons of fruit, fruit sales do not form a significant income source for the community. The main types of produced fruits in Debed are Apples, Plums and Pears with 240, 120 and 100 tons of production of each type respectively.

Figure 7 Types of Fruit Produced



Source: CCA Workshop Data - Heifer Armenia Calculations

However, despite the production quantities only a small portion of the production is actually sold. Currently only about 5 percent of the total fruit produced in Debed is actually sold or traded. Next to direct consumption in order to prevent the produced fruit from being wasted, community members use the fruit yield mainly as fodder for animals and for production of liquor, homemade jam, marmalade etc. A significant share of the remaining production which cannot be used in any possible manner is left on the trees to be wasted.

Of the small percentage of the fruit that is traded about half is traded in kind against other goods and the other half is sold on the nearby Vanadzor fruit market. The small quantities of

fruit sales are mainly targeted at small middle men and traders who buy fruit from the villagers and resell the fruit on the Vanadzor market or elsewhere.

Members of the focus group indicate the following issues as the main problems that hamper Debed's inhabitants to sell their produce:

- Low quality of production (in terms of sort's appearance etc.)
- Relative small per capita production quantities
- Access to markets

One of the main reasons for the low sales volumes of Debed's fruit is that the produced fruit mainly is of lower quality. More specifically the produced fruit it is of less popular sorts which currently are less demanded on the retail market. These specific sorts of fruits including apples and pears are inherited from the soviet period when collective gardens existed.

Changing the produced sorts can be very costly and investment intensive, therefore, it is unlikely that community member will make such investments in the short run. Yet, dried fruits production which is much less or not sensitive to specific fruit sorts can have potential. The latter needs to be further evaluated through the more in-depth value chain assessment.

The capacity of the community to use any existent potential of the fruit value chain is further limited by distance to potential markets and the lack of value chain specific infrastructure. Currently there are no fruit collection centers and industrial refrigerators, drying equipment or any other infrastructure specific to fruit value chain. Moreover, community members do not have vast experience or specific knowledge of the fruit value chain.

### **3.2. Dairy sector capacity**

Dairy is currently the main economic sector of Debed. Currently community members are producing tentatively about 600 tons of raw milk worth about AMD 120 mln annually. Sales of raw milk is however insignificant as only about 20 percent of the produced milk is sold as raw milk generating AMD 24 mln annually. The remaining part of the milk is processed by the households into cheese and other dairy products and sold on an irregular basis.

The inability of farmers to sell raw milk on a consistent basis, forces them to make much larger time and resource investments in to milk processing and also results in much more irregular and unpredictable income from sales of dairy products and higher sales related costs.

The community has more than enough fodder bases for the existent cattle headcount and so fodder does not impose a problem to production. Yet, community members do not make use of distant pastures as there is no drinking water available for the animals in those areas. As result only adjacent pastures tend to be (over) utilized.

Availability of veterinary services does not hamper the operations of farmers in this community as the community has about 10 veterinaries that cover the need for veterinary medical services of the entire community. Access to veterinary medicine is a bit more difficult as community members need to travel for about 25 km to the nearest animal pharmacy.

In terms of sector related infrastructure, there are currently no milk collection/cooling units in the community. This is one of the main reasons why the community is not able to sell raw

milk effectively. Only during high season occasionally milk is collected by collectors from Vahagni community where a consolidation unit exists and very small quantities are sold by individuals to a cheese factory in Vanadzor.

To conclude the community has significant production potential to produce milk yet the lack of value chain related infrastructure such as consolidation units, milk producer cooperatives and transportation means hamper milks sales of the community.

### **3.3. Tourism Sector Capacity**

Debed currently attracts about 20 foreign tourists annually next to a large group of locals who come to the surrounding areas of the community to spend a day next to the river. These are mainly day tourists who do not spend more time in the area. Tourists mainly hear about Debed from word of mouth, as there are no professional tour agencies that promote the community and organize tours to Debed and its surroundings.

Currently there are no B&Bs or any other accommodation services offered in Debed. There are however two B&B in a 20 km range of the community which together have the capacity to accommodate about 30 guests.

Debed has vast natural resources with touristic value as it is located next to a renowned river and waterfall in an area with abundance of forests and beautiful scenery. The following are some of the main natural resources of the community with a touristic value:

- The forest which is a rich wildlife habitat with rare and diverse range of animals including bears
- Natural Caves which throughout history have been inhabited by humans
- Hunting infrastructure and respective huts

Next to natural resources the community also has various cultural and or culinary heritage. The following are the main cultural and culinary resources of the community:

- Famous winged cross stone
- Remaining from pre historic habitation
- Fish and fish barbeque
- Specialty - Harisa made of pork (Armenian pot)

As products or features that can be featured as Debed's local specialties; or interesting events with touristic value, community members highlighted the following:

- The Football match named after Samvel Petrosyan which is organized among football teams of 5 surrounding villages
- The one day community winter sport championship

Except a fish breeding center which also has a fish restaurant, there are currently no other hospitality service providers in the community such as restaurants spas etc. there are also no established links with external tourism related markets and agencies which promote and link it with tourists. As the main issues hampering tourism development in the community focus group member indicated:

- Lack of B&B as houses with the minimum required living condition such as renovated bedroom and toilets etc.
- Bad physical connection of the community to the main road
- Lack of public awareness about the community as the touristic resources of the community are not promoted

However, despite the mentioned issues, community members believe that Debed has a very large potential for further development of tourism in the community and this can serve as an additional/alternative economic sector and income source for community members.

### 3.4. Score of Community Resources and Capacity

This sub section presents the quantitative summary of Debed's resource assessment as evaluated in the framework of the ARDI Program. The evaluations are mainly based on primary data collection through community consultations. The following table presents the scores of Debed community regarding various general and value chain specific resources.

The maximum possible score on community resources is 200. The scoring is done based on objective mathematical assessments and ratios and expert evaluations. The scores are on a scale of 1 to 5, where 1 is low and 5 is maximum high. The weights add up to a total of 10 in each category where 1 is low and 10 is high.

**Table 4** Debed Community Resources

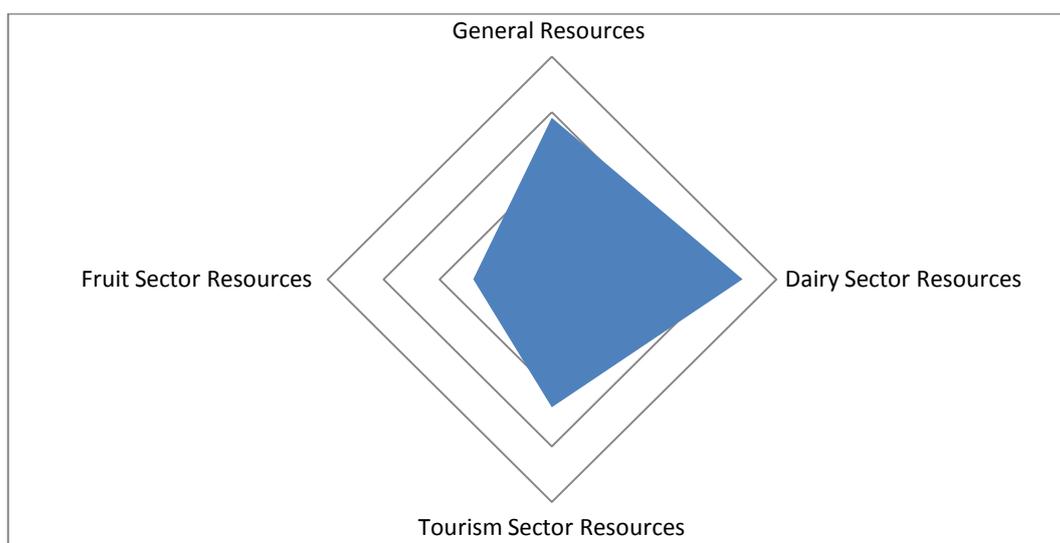
Indicator	Score	Weight	Weighted Score
<b>General Community Capacity</b>			
<b>Community Educational level</b> (level of education and agricultural targeting of education) on a scale of 1-5	3	3	9
<b>Community vitality</b> (number of people aged 15-29/community population) on a scale of 1-5	4	3	12
<b>Community infrastructure</b> (existence and condition of roads, water, energy sewage etc.) on a scale of 1-5	2	2	4
<b>Community Natural resources</b> (stone, diamond and other precious metal reserves etc.) on a scale of 1-5	2	2	4
<b>Total Score General Community capacity</b>			<b>29</b>
<b>Dairy sector capacity</b>			
<b>Milk Production</b> (Milk production/per capita) on scale of 1-5 =0.67	4	4	16
<b>Milk Productivity</b> (Milk production/animal head ratio etc) = 1.8 on scale of 1-5	3	2	6
<b>Fodder Availability</b> (Animal/pasture) on scale of 1-5	3	3	9
<b>Dairy sector related experience and infrastructure</b> (on scale of 1-5)	3	1	3

<b>Total Score Dairy Sector Capacity</b>			<b>34</b>
<b>Fruits sector capacity</b>			
<b>Ability to produce quality fruit (0.2)</b> (on scale of 1-5)	1	4	<b>4</b>
<b>Fruit quality</b> (scale 1-5)	2	3	<b>6</b>
<b>Existence of Fruit infrastructure</b> (hail centers etc.) on scale of 1-5	1	2	<b>2</b>
<b>Fruit sector related experience and knowledge</b> (on scale of 1-5)	2	1	<b>2</b>
<b>Total Score Fruit Sector Capacity</b>			<b>14</b>
<b>Tourism Sector Capacity</b>			
Tourism related resources as natural, cultural etc. on scale of 1-5.)	3	3	<b>9</b>
Current tourist visits to the community (on scale of 1-5)	2	2	<b>4</b>
Existence of tourism infrastructure (B&Bs, restaurants, spas etc. on scale of 1-5)	2	3	<b>6</b>
Existence of tourism related experience and knowledge (on scale of 1-5)	2	2	<b>4</b>
<b>Total Score Tourism Sector Capacity</b>			<b>23</b>
<b>Total Score Community Resources</b>			<b><u>100</u></b>

Source: CCA Workshop Data - Heifer Armenia Calculations

Debed scores relatively high on general resources and dairy sector capacity with a score of 29 and 34 respectively. The third highest score of the community involve tourism related capacities and resources which was 23. With a weighted score of 14 the fruit sector related capacities of the community scored the lowest. The total weighted score of Debed Community on community resources is 100. The Figure 9 presents a visual illustration of the community resources in the four indicated areas.

**Figure 8** Debed Resource Map



#### 4. RESOURCE UTILIZATION

As a main part of HA’s community assessment model, this subsection of the assessment focuses on evaluating the utilization level of community resources. Evaluating utilization levels will allow us to better understand the need of the community for programmatic interventions in the evaluated areas.

The following table presents the resource utilization scores of Debed community regarding various general and value chain specific resources. The scoring is again done based on objective mathematical assessments and ratios and expert evaluations. The utilization scores involve a scale of 1 to 5, where 1 is low and 5 is the maximum high. Consequently, low weighted scores on resource utilization indicate that resources of the community in a specific field are under-utilized. The included weights add up to a total of 10 in each category, where 1 is again low and 10 is high.

**Table 5** Debed Community Resources Utilization

Indicator	Score	Weight	Weighted Score
<b>Dairy sector capacity</b>			
Utilization of fodder base (Animal/pasture ratio)	4	3	<b>12</b>
Milk collection level (production/collection on a scale of 1-5)	1	4	<b>4</b>
Community milk Productivity 0.51 (on a scale of 1-5)	2	1	<b>2</b>
Overall dairy sector resource utilization (on scale of 1-5)*	2.5	2	<b>5</b>

Total Dairy Sector (Max 50)				<b>23</b>
<b>Fruits sector capacity</b>				
Utilization of quality production capacity (on a scale of 1-5)	4	3	<b>12</b>	
Current sales of quality fruit production (on a scale of 1-5)	3	3	<b>9</b>	
Professional Fruit processing (on a scale of 1-5)	1	2	<b>2</b>	
Overall fruit sector resource utilization (on scale of 1-5)	4	2	<b>8</b>	
Total Fruit Sector Max 50				<b>31</b>
<b>Tourism sector capacity</b>				
Use of natural, cultural and other resources for community development of 1-5.)	1	4	<b>4</b>	
Revenue generation through hospitality services (as B&Bs, restaurants, etc. on scale of 1-5)	1	3	<b>3</b>	
Professional use of tourism related Knowledge and HR capacity (on scale of 1-5)	1	2	<b>2</b>	
Overall Tourism sector resource utilization (on a scale of 1-5)	1	1	<b>1</b>	
Total Tourism Sector (Max 50)				<b>10</b>
<b>Total Score Resource Utilization</b>				<b><u>64</u></b>

**Source:** CCA Workshop Data - Heifer Armenia Calculations

\* The general evaluations of each sector involve expert evaluation of various components of influence to sector capacity and its utilization. Regarding the dairy sector, for example, the following factors were taken into account: knowledge and experience of the community in this specific sector, willingness of the community to invest in the sector and other similar factors.

Debed had a total resource utilization score of 64 out of 150. The community scored the lowest regarding tourism sector resource utilization as there is currently hardly any economic activity in this sector. Natural, cultural and other resources of the community with touristic value are not being utilized for commercial purposes. With a total weighted score of 10, tourism sector is the most under-utilized sector of the community evaluated in this framework.

The tourism sector was followed by dairy sector. Debed's dairy sector resources are relatively underutilized as resource utilization score of this sector is 23. Next to potential for increased productivity, there is among others a large fodder base available in the community which still can be exploited for animal husbandry and milk production.

The overall resource utilization score of Debed in the fruit sector was 31 consequently, resource utilization is the highest in this sector. Fruit sector evaluations involve utilization of production capacities regarding high quality (marketable) fruit. As discussed in section 3.1, the capacities of Debed regarding high quality fruit production are low as the fruit produced in the community is mainly of low quality and of less popular sorts. Therefore utilization of resources for high qualitative production is high which is indicated with a score of 4. Sales of high quality production high in comparison as only high quality products are expected to be sold.

## 5. ENABLING ENVIRONMENT

A very important factor for community development and consequently a focus point of the community competitiveness assessment is the environment. Enabling environment is an overarching factor that involves a set of broad issues which directly influence all aspects of community development. The factors assessed by our model involve five main indicators that assess the environment from different specific perspectives relevant to the ARDI program. These factors involve:

- The willingness of community members and local officials to commit and invest resources (time and money) in community development.
- Willingness of community members to cooperate with one another towards common gain and development.
- Coverage of the community by other development projects/initiatives.
- Linkage of community with existent (business) support structures, both public and private.
- Position of the community to serve surrounding communities

These factors are assessed by focus group members on a scale of one to five where "one" is the worst score and "five" the best. The total maximum score on enabling environment is 100. Communities that score high on these features are considered having enabling environment on the features that are of crucial importance for the ARDI program. Moreover these factors all have certain weights which to some degree stress the importance of each specific factor to the program. The following table presents the scores of Debed community in relation to the mentioned indicators and the total weighted score of the community regarding enabling environment.

**Table 6** Debed's Enabling Environment

<b>Indicators</b>	<b>Score (1-5)</b>	<b>Weight</b>	<b>Weighted Score</b>
Willingness of community members and officials to invest and activity participate in the program	4	2	8
Willingness of community members to cooperate towards common gain and development	4	4	16
Coverage of the community by other development projects/initiatives.	2	1	2
Linkage of community with existent (business) support structures	2	1	2
Position of the community to serve surrounding communities	5	12	60
<b>Total Score Enabling Environment</b>			<b><u>88</u></b>

**Source:** CCA Workshop Data - Heifer Armenia Calculations

The total score of Debed on enabling environment is 88. The community has a favorable (geographic) location which will enable the community to serve as a community cluster center and reach the surrounding communities incase investments are made in the framework of the ARDI program. This is of crucial importance to the program and therefore has a high weight in the assessment. Moreover, the community has a very motivated population who are willing to invest resources and actively participate in the program.

The second highest score of the community was 8 and involved the willingness of community members to cooperate towards common gain and development. The ability to work with each other is important in case cooperative approaches such as milk producer or fruit processing cooperatives are to be established in the community.

The community has limited links existent (business) support structures and there is currently only one other small development program being implemented in the community that involves renovation of the mayor's office. Debed is not involved in other large agricultural programs such as the Community Agricultural Resource Management and Competitiveness Project (CARMAC) and therefore scored low on these two indicators.

## 6. CONCLUSIONS

Debed is a relatively old community with a beautiful nature. The community houses 893 residents which mainly are involved in Animal husbandry, followed by beekeeping and to some degree horticulture.

The total competitiveness assessment score of Debed was 124. In terms of resources, Debed scored 100 from a maximum of 200. Among others Debed has a relatively large population of young individuals which can be considered a valuable asset for the community. Next to general community capacity Debed scored high on dairy sector capacity which involved rather strong Milk Production capacity, Milk Productivity and abundance of Fodder Availability. Tourism sector capacities of the community in terms of natural cultural and other resources followed. Fruit sector related capacities of the community scored the lowest.

Utilization of resources was the lowest in the tourism/hospitality sector as there are hardly any professional tourism services offered by the community. The second most underutilized sector was the dairy sector as there is still more potential for raw milk production and sales. There are currently no milk collection/consolidation points in the community and no organized milk sales have yet been established. This provides the community with a strong resources base that can be utilized to a much larger degree.

The dairy sector related capacities including the abundance of pastures and traditional occupation of community members in this sector and the low utilization rates of these capacities makes animal husbandry the most competitive sector of the community. Taking into account the resources of the community regarding tourism, this sector can also have quite large potential to contribute to Debed's development.

Debed has a relatively high score on enabling environment, which is primarily due to the geographic position of the community to serve as a cluster centre. Direct investments in the community in any regard will have a large potential to serve surrounding communities and contribute to the development of these communities as well.

## 7. APPENDIX 1: APPRAISAL APPROACH

<b>Community Resources</b>	
<b>Indicator</b>	<b>Appraisal Measures</b>
<b>General Community Capacity</b>	
<b>Community Educational level</b>	<p>Level of education and agricultural targeting of education as percentage of population with</p> <p>Secondary professional and Higher education on a scale of 1-5 where [0-5%=1] – [ 5-10%=2] – [10-20%=3] [20-40%=4] – [40%+=5]</p>
<b>Community vitality</b> (number of people aged 15-29/community population) on a scale of 1-5	<p>Number of people aged 15-29/community population) on a scale of 1-5 where [0-5%=1] – [ 5-10%=2] – [10-20%=3] [20-40%=4] – [40%+=5]</p>
<b>Community infrastructure</b> (existence and condition of roads, water, energy sewage etc.) on a scale of 1-5	<p>Existence and condition of infrastructure as water, energy sewage etc.) on a scale of 1-5</p> <p>where [no-infrastructure=1] – [inadequate infrastructure=2] – [Usable quality infrastructure=3] – [good quality infrastructure=4] – [excellent infrastructure=5]</p>
<b>Community Natural resources</b> (stone, diamond and other precious metal reserves etc.) on a scale of 1-5	<p>Accumulated score of various resources such as forests, stone, diamond and other precious metal reserves etc.) on a scale of 1-5 where [no resources =1] – [forest and water=1] – [Stone mines=1] – [Precious metals=1] – [fossil fuel reserves as coal=1]</p>
<b>Dairy sector capacity</b>	
<b>Milk Production</b>	<p>(Milk production/per capita) on scale of 1-5 where [0-0.2=1] – [ 0.21-0.4=2] – [0.41-0.6=3] [0.61-0.8=4] – [0.81+=5]</p>

<b>Milk Productivity</b>	(Milk production/animal head ratio etc.) on scale of 1-5 where [0 - 1=1] – [1- 1.5 =2] – [1.5-2=3] [2.1—2.5=4] – [2.5+=5]
<b>Fodder Availability</b>	(Animal/pasture ratio on scale of 1-5 where [0 - 1=1] – [1- 2 =2] – [2-3=3] [3-4=4] – [4+=5]
<b>Dairy sector related experience and infrastructure</b> (on scale of 1-5)	Accumulated score of various resources as educate people and people with professional experience on scale of 1-5 [Milk technicians =1] – [ Vets =1] – [Experience in the sector=1] [Consolidation units=1] – [processing plants=1]
<b>Fruits sector capacity</b>	
<b>Ability to produce quality fruit</b>	Quantity of quality fruit production in tons per capita on scale of 1-5 where [0 - 1=1] – [1- 1.5 =2] – [1.5-2=3] [2.1—2.5=4] – [2.5+=5]
<b>Fruit quality</b>	Share of high quality fruit of the total fruit production scale on a scale of 1-5 where [0-10%=1] – [10-20%=2] – [20-40%=3] [40-80%=4] – [80-100%=5]
<b>Existence of Fruit infrastructure</b>	Hail centers and consolidation units etc. on scale of 1-5 in terms of perceptual coverage [0-10%=1] – [10-20%=2] – [20-40%=3] [40-80%=4] – [80-100%=5]
<b>Fruit sector related experience and knowledge</b> (on scale of 1-5)	Existence of educated people and people with professional experience in this sector including landscape experts etc.
<b>Tourism Sector Capacity</b>	
Tourism related resources as natural, cultural etc.	Existence of attractive natural environments, culinary specialties, hospitality of the people etc. on scale of 1-5.
Current tourist visits to the community	Number of visitors visiting the community annually (international and locals) on scale of 1-5 where [0 - 10=1] – [10 - 100 =2] –

	[100-200=3] [200-400=4] – [400+=5]
Existence of tourism infrastructure (B&Bs, restaurants, spas etc. on scale of 1-5)	Existence of B&Bs, hotels, restaurants, spas etc. on scale of 1-5 where existence of all different services is one extra point so only B&B and or hotel =1 points, Restaurants = 1 points, Spas =1 points, leisure possibilities/night life =1 and if all of these points exists 5 points.
Existence of tourism related experience and knowledge	Previous formal and informal experience with tourism service delivery on a scale of 1-5 where only informal hospitality is 1, informal paid hospitality is 2, formal experience as registered business is 3, formal with established links to local tour operators is 4 and formal with established links with international tour operators is 5.

<b>Resource Utilization</b>	
<b>Indicator</b>	<b>Appraisal Measures</b>
<b>Dairy Sector</b>	
Utilization of fodder base	Ratio of number of animals divided by the existent pasture and grassland – minus 1.8 On a scale of 1-5 where [0 – 0.5=5] – [0.5- 1 =4] – [2-3=3] [3-4=2] – [4+=1]
Milk collection level (production/collection on a scale of 1-5)	Raw milk production and regular collection ratio in percentage on a scale of 1-5 where [0-10%=1] – [ 10-20%=2] – [20-40%=3] [40-80%=4] – [80-100%=5]
Milk Productivity	Milk productivity compared to maximum productivity of Caucasian Grey (local breed of cows in Armenia which is 3.5. On a scale of 1-5 where [0 – 0.2=1] – [ 0.2- 0.5 =2] – [0.5-0.8=3] [0.8-1=4] – [1+=5]
Overall dairy sector resource utilization (on scale of 1-5)	Independents expert evaluation of various components of influence to sector capacity and its utilization.
<b>Fruits Sector Capacity</b>	
Utilization of quality production capacity	Percentage of quality production compared to actual production of fruits on a scale of 1-5 where [0-10%=1] – [ 10-20%=2] – [20-40%=3] [40-80%=4] – [80-100%=5]
Current sales of quality fruit production	Percentage of quality production sales compared to actual production of high

	quality fruits on a scale of 1-5 where [0-10%=1] – [ 10-20%=2] – [20-40%=3] - [40-80%=4] – [80-100%=5]
Professional Fruit processing	Professional (of farm) processing of fruit in the community as drying, juicing etc. where [0-10%=1] – [ 10-20%=2] – [20-40%=3] [40-80%=4] – [80-100%=5]
Overall fruit sector resource utilization	Independents expert evaluation of various components of influence to sector capacity and its utilization.
<b>Tourism Sector Capacity</b>	
Use of natural, cultural and other resources for community development.	Regularity of tourist visits to the natural cultural and other resources of the community where very rare=1, rare 2, occasionally =3, often is 4 and very often is 5.
Revenue generation through hospitality services (as B&Bs, restaurants, etc. )	Contribution of tourism to community income generation on a scale of 1-5 where [0-10%=1] – [ 10-20%=2] – [20-40%=3] - [40-80%=4] – [80-100%=5]
Professional use of tourism related Knowledge and HR capacity	Number of people working and utilizing their tourism related experience in this sector as percentage of total community population where [0-10%=1] – [ 10-20%=2] – [20-40%=3] - [40-80%=4] – [80-100%=5]
Overall Tourism sector resource utilization	Independents expert evaluation of various components of influence to sector capacity and its utilization.

## 8. APPENDIX 2: INFRASTRUCTURAL INVENTORY

**Economic infrastructure** - includes industrial areas and buildings suitable for the production, storage, processing factories, stores, food service outlets, markets, hotels, guest - houses (B&B), mines and mining, etc.

Infrastructure	Operates/does not	Belongs to/ private/ public	Production capacity, if applicable	Inner community/outside of community/5km radius
1. Stone processing workshop	Operates	Private		Up to 1 km
2. Stone processing workshop	Operates	Private		Up to 1.5 km
3. Storage building - wood processing workshop	Operates	Public		
4. Stores - 3	Operate	2 Private, 1 rented		
5. Sand mining	Does not operate			Up to 1 km
6. Metal building	Does not operate	Community	16x11 m	Emergency situation

**Transport infrastructure** - including roads / intra and inter/, bridges, tunnels, traffic direction, road lighting, community transport, car service centers, gas stations, gas station, etc.

Infrastructure	Operates /does not operate	Belongs to/ private/ public	Inner community /outside of community /15 km radius/	Comments
1. Road 18 km	operates	community	Inner community	3 km - normal 15 km – damaged
2. Road 1,5 km	operates		Between communities	1,5 km - damaged
3. Bridges - 3	operate	community	Inner community	
4. Transportation between communities	operates			From Vanadzor to Debed to Dsegh
5. Outside / street	operates			There are electricity

lights	1 point			columns but do not operate
6. Gas station	operates	private	till 3 km	
7. Petrol station	operates	private	till 5 km	

**Energy infrastructure - including electrical substations, hydropower stations, network, gasification, gas substations, services, etc.**

Infrastructure	Operates/does not operate	Belongs to/ private/ public	Coverage /%/	Comments
1. Electricity stations - 5	Operate	HEN	100 %	
2. Micro hydro electrostation - 1	Operates	Private (Closed Joint-Stock Company)		
3. Electrical Network	There is a net	HEN	100 %	
4. Natural gas coverage	There is a net	ArmRusgasprom CJSC	56 %	From 284 households 158 have natural gas
5. Natural gas regulation points - 2	Operates	ArmRusgasprom CJSC		

**Water infrastructure - including drinking and irrigation water network, sewerage, water drafting stations, drainage systems, water pumping stations, water meters, drainage systems, expansion basins, storm sewers, etc.**

Infrastructure	Operates/does not operate	Coverage /%/	Comments
1. Water supply network	There is a network	82 %	From 284 households about 50 have no running water at home
2. Water collection pools- 7	Operate		Both financial and technical reasons

**Telecommunications infrastructure - mail, fixed/landline telephone, mobile communication, Internet, television, television towers, etc.**

Infrastructure	Operates/does not operate	Coverage /%/	Comments
1. Post office	Operates	100 %	
2. Landline phone	Beeline is operating	53 %	From 284 households 150 has landline phone
3. Cell phone coverage	Operate	100 %	All cell phone operators are included
4. Internet coverage	There is	about 40 - 50 %	Individual users

N.B. 8 km from the communication point - parabolic antenna

**Waste management Infrastructure - organized waste management, centralized garbage shedding sites, biogas production, etc. - None**

**Geological infrastructure – hail stations, weather forecast stations, etc. - None**

N.B. There is an assigned person in the community who is responsible for checking water's physical options.

**Management infrastructure - village administration, police, fire station and so on.**

Infrastructure	Operates/does not operate	Comments
1. Municipality	operates	

**Social infrastructure - community ambulance, hospitals, schools, kindergartens, gym, community center, museum, library, etc.**

Infrastructure	Operates/does not operate	Belongs to/ private/ public	Comments
1. Medical center- 1	Operates		
2. School - 1	Operates		
3. Kindergarten - 1	Operates		
4. Playground - 2	Operate		
5. Library – 2	Operate		One at the school, the other at the municipality building



**ARDI** is a 5-year program funded by the US Agency for International Development. Launched in September 2013; the program aims to increase rural employment by tackling constraints to rural economic development of communities in the Syunik, Vayots Dzor and Lori Marzes (provinces) of Armenia. The program will support interventions in three main rural economic sectors/Value Chains involving Dairy Processing, Fruit Processing and Rural Tourism.