



Republic of



Armenia



**"De-risking and Scaling-up Investment in Energy Efficient Building Retrofits"
UNDP - GCF project**

REPORT

**Gender and Social Vulnerability Assessment of
Households**

*Based on the results of apartment owners' survey in multi-apartment
buildings in RA Marzes (regions)*

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Introduction

In November-December 2020, within the framework of the “**De-risking and Scaling-up Investment in Energy Efficient Building Retrofits**” UNDP-GCF project (hereinafter referred to as Project), a household survey (hereinafter referred to as Survey) was conducted in multi-apartment buildings (hereinafter referred to as MABs), located in nine communities of five marzes (regions) of the country.

The objective of the Survey was to perform an evaluation of social vulnerability, as well as gender characteristics and features of households (HHs) resided in the MABs included in the program on "Rehabilitation of the property under common shared ownership in multi-apartment buildings, including the implementation of energy efficiency measures"¹ implemented at the expense of subventions provided to the communities from the RA State budget.

The Survey was relevant taking into consideration the precondition which required the representation of at least 30% of socially vulnerable groups, women and children in the structure of Project beneficiaries, to justify the co-financing of the Community subvention program by the Project.

The outcomes of the Survey may complement and enhance "heating poverty" criteria that are a component of multidimensional poverty assessment, by providing a breakdown into socially vulnerable groups and gender indicators.

The conclusions and recommendations based on the results of the Survey may also be used to specify the target groups of the social and gender policy of the Republic of Armenia and to develop targeted programs for these groups.

1. Methodology of Survey

The Survey was conducted in those MABs which are included in the Community Subvention Programs for 2020 (hereinafter referred to as 2020 Subvention Program) where thermal insulation works are planned to be implemented either *partially* (e.g., roof or attic cover insulation, replacement of entrance doors and windows) or *full-scaled* (insulation of the building's envelope and commonly owned areas in the building). *In*

¹ According to the amendments made during the years 2019-2020 in the RA Government Decree "On approving the procedure for providing subventions to the communities from the state budget of the Republic of Armenia" (N1708-N, 16.11.2006) the implementation of energy efficiency measures in MABs was included in the scope of areas covered by subvention, and the increased contribution from the RA state budget by 5% in case of 20% or more funding of the subvention program provided by donor organizations, was an additional incentive for cooperation among communities and donor organizations (including UNDP programs). [DocumentView \(arlis.am\)](#)

*essence, the selection of MABs was performed by the communities which have applied for co-financing.*²

It should be noted that 15 communities in 7 regions across the country had submitted applications for 2020 Subvention Program in the area of energy efficiency, envisaging thermal insulation works in 125 buildings in total, of which 82 - envisaging full-scale insulation works. However, with the technical and financial support of the Project, thermal insulation measures were planned to be implemented in a total of 75 buildings³ (*Table 1*).

Table 1. Communities implementing energy efficiency measures in MABs, with the Project's co-financing

Marz	Community	Number of buildings intended for thermal insulation		
		total	complete	partially complete
Syunik	Kajaran	36	36	0
Lori	Vanadzor	9	9	0
	Tashir	10	3	7
	Akhtala	10	0	10
	Spitak	3	3	0
	Stepanavan	3	3	0
Aragatsotn	Ashtarak	2	2	0
Tavush	Ijevan	1	1	0
Ararat	Vedi	1	1	0
Total		75	58	17

Thus, the ***Survey was conducted in all 75 buildings selected for thermal insulation measures co-financed by the Project.***

In preparation for conducting the Survey, a household questionnaire (*Annex 1*) as well as the guideline for its completion (*Annex 2*) were developed. According to the guidelines, the owners of "closed doors"⁴ (due to practical impossibility) as well as those

² In order to be eligible for subvention from the RA state budget, the communities are required to fill out an application, the requirements and justification of which are defined by the RA Government Decree N1708-N (16.11.2006). In particular, the application, in addition to a number of technical parameters, should clearly state the proposed "project's impact on the community and the beneficiaries". In the application submitted for the energy efficiency projects in the field of MABs it is mandatory to include " the amount of increased savings and (or) the level of comfort provided to the beneficiaries as a result of the implementation of the program ...". [DocumentView \(arlis.am\)](http://arlis.am)

³ It should be noted that for a number of technical reasons, the thermal insulation works in Vanadzor were not carried out in 2020, but this is not significant for the purposes of this report, as the objective of the Survey is to study the application of pro-poor approach and social vulnerability criteria (e.g., targeting the inclusion of women, children, people with disabilities, etc.) in the MABs selection process.

⁴ The phenomenon of "closed doors" (e.g., apartments that were currently not inhabited) is quite common in the country, mainly due to the emigration of families. In some cases, the owner does not live in the apartment because he/she has an alternative place of living (i.e., another apartment, or lives in the same apartment with a parent or child, etc.).

households that live on a rental basis (because they are not the owners of the apartment) do not participate in the Survey. Some buildings had apartments that had been converted into business or public areas (shops, hair salons, offices, etc.). Naturally, they were considered non-residential and were also removed from the list of apartments under Survey.⁵ **Table 2** demonstrates the Survey's final sample size.

Table 2. Sample size of the Survey

Marz	Community	Number of apartments in MABs ⁶	Of which:			Sample size	
			"Close d door"	Rented	Non-residential	HHs ⁷	%
Syunik	Kajaran	1101	97	45	3	956	86.8
Lori	Vanadzor	415	135	7	8	265	63.9
	Tashir	299	90	15	6	188	62.9
	Akhtala	328	174	0	0	154	47.0
	Spitak	71	22	0	1	48	67.6
	Stepanavan	45	14	1	1	29	64.4
Aragatsotn	Ashtarak	48	4	3	0	41	85.4
Tavush	Ijevan	64	31	0	0	33	51.6
Ararat	Vedi	27	1	2	0	24	88.9
Total		2398	568	73	19	1738	72.5

To conduct the fieldwork, women-led NGOs (hereinafter referred to as NGOs) which operate in the marzes and the communities covered by the Survey and have experience in conducting household surveys have been selected.⁸ This approach derives from the Project's gender related requirements (GRRs), namely - to support women and their unions and organizations.

In total, 1738 questionnaires filled in by the NGOs were checked, reviewed (as and when required), after which they were computer-processed and "MABs Survey 2020" database was created using the Excel software tool. The latter is classified according to regions and communities. Analytical tables have been developed based on the data collected, and the main package is presented in **Annex 3**.

It should be noted that despite the rather large sample size of the Survey (1738 HHs), still, it ***can not be considered as representative, as the HHs were not, in fact, selected***

⁵ It should be noted that there have been no records of rejection (so called "non-response") in the course of the Survey, and in case of owner's absence, the interviewer was required to repeat visits.

⁶ It was identified in the course of the Survey, that some of the owners had merged the two apartments on the same floor, and the number of such apartments exceeds 100. The absolute majority of them, almost 90%, are located in Kajaran. In the Table, the combined apartments are registered as one unit because it belonged to one household. Consequently, the "actual" number of apartments used to determine the sample size is less than that stated in the building passport.

⁷ A household is considered to be the family of the actual owner of an apartment (including merged ones), regardless of whether the member of that household is registered in that apartment.

⁸ In Kajaran, the Surveys were conducted by "Kajaran" condominium, and in other communities by "Spitak Bazeh" (Spitak, Lori marz), "Women's Resource Center" (Vanadzor, Lori marz) and "Lore Eco Club" (Stepanavan, Lori marz) community-based NGOs.

by statistically accurate methods, other than by the fact of their residing in the MABs included in the 2020 Subvention Program. Therefore, the summary and/ or disaggregated data in the report and the conclusions based on their analysis refer only to the present Survey and should not be scaled up to the community or the marz level.

2. The surveyed households and their members

The surveyed 1738 HHs comprise **5,797 members** in total. The breakdown into three main groups in terms of gender and social vulnerability (women, children under 18 and adults 63+) are presented in **Table 3**.

Table 3. Gender and age composition of the surveyed households' members

Communities	Number of HHs members surveyed	Of which:			Distribution in%		
		Women (girls)	Children <18 years	Retired > 63 years	Women (girls)	Children <18 years	Retired > 63 years
<i>Kajaran</i>	3327	1674	744	447	50.3	22.4	7.7
<i>Vanadzor</i>	809	427	178	166	52.8	22.0	20.5
<i>Tashir</i>	522	302	126	102	57.9	24.1	19.5
<i>Akhtala</i>	510	280	131	58	54.9	25.7	11.3
<i>Spitak</i>	154	86	41	16	55.8	26.6	10.4
<i>Stepanavan</i>	103	56	22	28	54.4	21.4	13.0
<i>Ashtarak</i>	138	71	28	18	51.4	20.3	13.0
<i>Ijevan</i>	121	60	27	12	49.6	22.3	9.9
<i>Vedi</i>	113	51	34	17	45.1	30.1	15.0
Total	5797	3007	1331	864	51.9	23.0	14.9

According to the data, *women prevail in the total number of beneficiaries of community-based energy efficiency measures co-financed by the Project, almost 52%, which meets GRRs of the Project*. The share of children and population at the retirement age among the beneficiaries of the Program is quite high: 23% and near of 15% respectively. This is also a positive indicator in terms of their adequate representation in Project activities⁹.

3. Social vulnerability of surveyed households

Three indicators were selected for the assessment of social vulnerability of HHs: the fact of receiving family benefits, the presence of a person with a disability, and the families of single pensioners were considered as a separate household. This approach

⁹ For comparison, according to official statistics, at the beginning of 2020, in the total population of Armenia children under the age of 15 comprised 21.3% in cities, 21.8% in villages, and population at the age of 63+ comprised 16.1% and 12.2%, respectively. "Demographic Handbook of Armenia, 2020" [demog_2020_2.pdf \(armstat.am\)](https://armstat.am/demog_2020_2.pdf)

is based on the results of the study on "Social Vulnerability Assessment of Population: Main Approaches, Criteria, and System of indicators" conducted in the framework of the Project in 2018.¹⁰

Based on the abovementioned indicators, the distribution of surveyed HHs by communities involved in the Project is presented in **Table 4**.

Table 4. Distribution of households by social vulnerability

Communities	Number of HHs surveyed	Of which:			Distribution in %		
		Gets family benefits	Has a person with a disability	Single pensioner	Gets family benefits	Has a person with a disability	Single pensioner
<i>Kajaran</i>	956	24	68	55	2.5	7.1	5.8
<i>Vanadzor</i>	265	24	28	25	9.1	10.6	9.4
<i>Tashir</i>	188	47	28	24	25.0	14.9	12.8
<i>Akhtala</i>	154	19	29	12	12.3	18.8	7.9
<i>Spitak</i>	48	15	17	4	31.2	35.4	8.3
<i>Stepanavan</i>	29	8	8	3	27.6	27.6	10.3
<i>Ashtarak</i>	41	2	4	1	4.9	9.8	2.4
<i>Ijevan</i>	33	2	7	0	6.1	17.1	-
<i>Vedi</i>	24	2	12	3	8.3	50.0	12.5
Total	1738	143	201	127	8.2	11.6	7.3

8.2% of the surveyed households receive family benefits¹¹, moreover the share of families receiving benefits is higher in Spitak (almost every third), as well as in Stepanavan and Tashir communities - all are located in Lori marz. In total, 201 of the surveyed households (or 11.6%)¹² have people with disabilities, of which 12 HHs have 2-3 members with disabilities and 8 HHs have children with disabilities.

Single pensioners comprised 7.3% of all surveyed HHs, accounting for about 61% of all one-member HHs. The results of the households' Integrated Living Conditions Survey (ILCS) conducted annually by the Statistical Committee of Armenia show that during the last 10 years (2010-2019) the share of one-member households in the total number of households in Armenia increased more than 1.5-fold, making 15.7% of the total households in Armenia against 10% in 2010¹³ (according to the data of this Survey, one-member households comprised 15.5%).

¹⁰ <http://nature-ic.am/hy/publication/Social-Vulnerability-Assessment-of-Population/10558>

¹¹ The share of the Project beneficiary HHs included in the state family benefit system is fully in line with the national statistical data, according to which, by the end of the year 2019 more than 61,000 families received family benefits, which amount to 8.2% of all families (the total number of families in the Republic of Armenia is based on calculations, which are used by the Ministry of Labor and Social Affairs to determine the level of inclusion in the state family benefits system). [soc_vich_2019_13.doc \(armstat.am\)](#)

¹² In 2019 (by the end of year), 192 thousand people with disabilities (PWD) were included in the electronic database of the Ministry of Labor and Social Affairs of the Republic of Armenia (in the administrative register of PWD), which comprise up to 6.5% of the permanent population of Armenia. [soc_vich_2019_11.doc \(armstat.am\)](#)

¹³ www.armstat.am/file/article/poverty_2020_a_2..pdf

Thus, *the social impact of energy efficiency measures in the communities is evident, as the rates of involvement of socially vulnerable HHs as beneficiary groups in the selected MABs is quite high.*

4. Gender distribution of socially vulnerable households

Demographic characteristics and share of socially vulnerable groups are quite different in female and male-headed HHs (hereinafter referred to as FHHs and MHHs). This is evidenced by the data presented in *Table 5* and *Table 6*.

Table 5. Gender indicators of the surveyed households

Communities	Surveyed HHs			Gender characteristics of FHHs			Gender characteristics of MHHs		
	Female-headed HHs (FHHs)	Male-headed households (MHHs)	FHHs share in %	Total FHHs members	Of which:		Total MHH members	Of which:	
					Woman (girl)	%		Woman (girl))	%
<i>Kajaran</i>	171	785	17.9	345	258	74.8	2982	1416	47.5
<i>Vanadzor</i>	134	131	50.6	383	241	62.9	426	186	43.7
<i>Tashir</i>	78	110	41.5	141	112	79.4	381	190	49.9
<i>Akhtala</i>	53	101	34.4	122	83	68.0	388	197	50.8
<i>Spitak</i>	25	23	52.1	73	48	65.8	81	38	46.9
<i>Stepanavan</i>	10	19	34.5	25	18	72.0	78	38	48.7
<i>Ashtarak</i>	20	21	48.8	62	38	61.3	76	33	43.4
<i>Ijevan</i>	7	26	21.2	20	12	60.0	101	48	47.5
<i>Vedi</i>	6	18	25.0	27	12	44.4	86	39	45.3
Total	506	1232	29.1	1198	822	68.5	4599	2185	47.5

More than 29% of all surveyed HHs is female-headed, which is very close to the 30% target set by the Project GRRs. Women's representation is 1.4 times higher in FHHs than in MHHs, accounting for 68.5% of the total number of FHH members. This difference is largely due to the 3.2 times higher number of single-women-pensioner HHs compared to single-male-pensioner HHs (see *Table 6*).

Table 5. Social vulnerability indicators of FHHs and MHHs

Communities	Surveyed FHHs	Surveyed MHHs	Share of FHHs, %
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	Gets family benefits	Has a person with a disability	Single pensioner	Gets family benefits	Has a person with a disability	Single pensioner	Gets family benefits	Has a person with a disability	Single pensioner
<i>Kajaran</i>	13	9	41	11	59	14	54.2	13.2	74.5
<i>Vanadzor</i>	12	16	19	12	12	6	50.0	57.1	76.0
<i>Tashir</i>	23	13	21	24	15	3	48.9	46.4	87.5
<i>Akhtala</i>	15	5	10	4	24	2	78.9	17.2	83.3
<i>Spitak</i>	8	6	3	7	11	1	53.3	35.3	75.0
<i>Stepanavan</i>	3	2	2	5	6	1	37.5	25.0	66.7
<i>Ashtarak</i>	2	0	0	0	4	1	100.0	-	-
<i>Ijevan</i>	0	0	0	2	7	0	-	-	-
<i>Vedi</i>	0	2	1	2	10	2	-	16.7	33.3
Total	76	53	97	67	148	30	53.1	26.4	76.4

Female-headed households are the ones with higher representation in the state family benefit system, accounting for 53.1% of all beneficiary families. Moreover, the share of women (girls) in such FHHs is very high - almost 79%, in contrast to the MHHs receiving family benefits where women (girls) make up 49%. From this perspective, it can also be stated that ***the technical assistance and financial support provided by the Project to the communities is both the pro-poor and the women-centred.***

In the surveyed HHs, people with disabilities are mostly represented in MHHs, comprising 73.6% of all HHs having PWD members. Moreover, 83% of HHs with two or more PWD members are male-headed. It should be noted that more than half (52-53%) PWD included in the administrative register of PWD of the RA Ministry of Labor and Social Affairs, are men. In other words, in terms of the ***"disability" indicator, men and male-headed households are more vulnerable***¹⁴.

The HHs of single pensioners, as abovementioned, are predominantly FHHs, accounting for 76.4% of the total. ***Among FHHs of single pensioners the poverty is almost two-times more spread than among MHHs of single pensioners.*** Thus, 22 out of 97 such FHHs (22.7%) receive family benefits, while only 4 (13.3%) out of 30 identical MHHs receive family benefits.

5. Indicators related to heating in households

Issues related to heating apartments are very important in terms of assessing the social impact of thermal insulation community programs on the MABs residents. As the heating season had not yet started during the period of conducting the Survey, HHs

¹⁴ One of the possible causes of the recorded phenomenon is the increased number of people with disabilities among men following military service and war, which accounts for about 10% of disability cases. [soc_vich_2019_11.doc \(armstat.am\)](http://soc_vich_2019_11.doc/armstat.am)

answers to the appropriate questions of questionnaire referred to the previous year's heating season.

In the context of this Survey *heating option*, *type of fuel* and *heating mode* were taken as indicators relevant to heating apartments. As for the *heating option*, wall-mounted local gas boilers used for heating (hereinafter referred to as BAXI) and gas stoves with closed combustion chamber (hereinafter referred to as TURBO) were singled out.¹⁵ All other types of stoves, regardless of the type of fuel used (gas, electricity, wood, etc.) were recorded as "stoves". For other options used by HHs to heat the apartment (e.g., kitchen gas or electric stoves, any "handcrafted" ovens and heaters, etc.) the term "other" was used.¹⁶

"Gas", "electricity", "wood" and "other"¹⁷ notes were used for the *types of fuel*. As for the *heating mode* indicator, it was assessed by the resident with the help of the interviewer, based on the generalized perception of responses to the following two questions.

- *Do you heat the entire space of apartment or only specific rooms?*
- *Do you heat all day or at certain hours?*

Depending on the number of heated rooms and heating hours, the heating mode was estimated at 100, 50 and 30%. The instances of absence of any heating option, and consequently not heating the apartment at all, were marked with "0".¹⁸ The latter case was identified in 30 families, i.e., **1.7% of the surveyed HHs do not have any heating options and do not heat the apartment at all**¹⁹.

Indicators related to apartment heating by communities are presented in **Tables 6, 7 and 8** below.

Table 6. Distribution of HHs by heating option indicator

Communities	HHs that have a	Including those using as a heating option:	Distribution in%
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¹⁵ These technical terms are not well-known to the population in Armenia, instead the terms "BAXI type system" and "TURBO type furnace" are widely used, which were also used in this report for the sake of brevity.

¹⁶ Further details related to completing the questionnaire can be found in **Annex 2** attached to this report.

¹⁷ Given that the Survey was conducted in MABs located in urban areas where coal, manure, biomass is virtually not applicable in terms of apartment heating options, the "other" option was mainly intended to illustrate the cases where paper, old clothes, rubber items, etc. were used, which, according to some studies, is typical for very poor families.

¹⁸ It should be noted that some of the HHs had a heating option installed, however, because of distressed financial situation they have practically not used it last year. These cases were considered separately in this report.

¹⁹ Drawing parallels with the country's poverty rates, it should be noted that the extreme poverty rate in 2019 was 1.4%. www.armstat.am/file/article/poverty_2020_a_2..pdf

More than half of the households (51.9%) which heat their apartments, use BAXI type local heating system, 7.8% use TURBO type industrially manufactured gas stoves, and 40.3% use other type of stoves or other heating options. The latter are predominantly widespread in communities of Lori region, especially Akhtala, Tashir and Stepanavan.

According to the head of the "Lore Eco Club" NGO (Stepanavan), who conducted fieldworks in the mentioned settlements, most of these stoves are "resource-saving, energy-efficient" wood stoves, which were provided by international organizations within the framework of humanitarian aid programs. The key beneficiaries of the projects were the residents of settlements in the neighbourhood of forests, for whom wood was seen as the most affordable and accessible heating options (stoves were provided with the objective to prevent deforestation to the extent possible). However, in recent years, illegal logging has been virtually blocked due to regulatory mechanisms introduced by the government, including the imposition of severe sanctions. Naturally, forest wood was no longer seen as an affordable option. Considering the circumstances, some of the resourceful residents transformed their wood stoves into gas stoves, using "homemade" technologies.

Table 7. Distribution of households by heating fuel indicator

Communities	HHs that heat the apartment *		Including those which use for heating:			Distribution in %		
	Number	%	Gas **	Electricity	Wood ***	Gas *	Electricity	Wood ***
<i>Kajaran</i>	950	99.4	684	231	35	72.0	24.3	3.7
<i>Vanadzor</i>	252	95.1	146	103	3	57.9	40.9	1.2
<i>Tashir</i>	180	95.7	155	23	2	86.1	12.8	1.1
<i>Akhtala</i>	152	98.7	49	15	88	32.2	9.9	57.9
<i>Spitak</i>	48	100.0	40	6	2	83.3	12.5	4.2

Stepanavan	28	96.6	19	6	3	67.9	21.4	10.7
Ashtarak	41	100.0	38	3	0	92.7	7.3	-
Ijevan	33	100.0	24	7	2	72.7	21.2	6.1
Vedi	24	100.0	21	3	0	87.5	12.5	-
Total	1708	98.3	1176	397	135	68.9	23.2	7.9
* - includes only those HHs that do have any heating options and do heat the apartment								
** - including those HHs that used an electric stove in parallel (11 HHs)								
*** - including those HHs that used other heating options (kitchen gas stove, electric heater, etc., only 3 such HHs)								

Therefore, in Stepanavan and Tashir HHs, which mainly use other types of stoves, the indicator for gas used as a fuel for heating purposes is high (67.9% and 86.1%, respectively, see **Table 7**), and most of the residents of Akhtala community to date continues to use them as a wood stove. According to the data presented in **Tables 6** and **7**, Akhtala has the highest share of HHs using both stove and wood at the same time - 73.7% and 57.9%, respectively.

Thus, the vast majority of surveyed households (98.3%) has a heating option, and as a rule heats its apartment. **68.9% of all households which apply heating in their apartments, uses gas, 23.2% uses electricity and 7.9% uses wood.**

However, irrespective of the fuel used by HHs the issue of heating apartments is a significantly heavy financial burden for any household. Some HHs consider applying incomplete heating (i.e heating up to 50%) or nearly no heating (i.e heating up to 30%) practices as a solution to easing that financial burden to some extent (**Table 8**).

Table 8. Distribution of households by heating mode indicator

Communities	HHs which use heating in their apartments	Number of HHs which heat the apartment by:			Distribution of HHs by heating mode, %		
		100%	50%	30%	100%	50%	30%
Kajaran	950	185	539	226	19.5	56.7	23.8
Vanadzor	237	63	127	47	26.6	53.6	19.8
Tashir	180	123	43	14	68.3	23.9	7.8
Akhtala	152	18	112	22	11.8	73.7	14.5
Spitak	48	23	24	1	47.9	50.0	2.1
Stepanavan	28	14	7	7	50.0	25.0	25.0
Ashtarak	41	7	27	7	17.1	65.8	17.1
Ijevan	33	4	26	3	12.1	78.8	9.1
Vedi	24	18	4	2	75.0	16.7	8.3
Total	1693	455	909	329	26.9	53.7	19.4

According to the data in the table, **the vast majority of HHs - almost 2/3 - are not able to heat the apartment to the fullest extent.** Moreover, every fifth household heats the apartment by 30%, i.e., either a few hours a day or heats one room where all family members usually gather. Some HHs reported that in some cases they were compelled

to provide heating in the bedroom for a small child and/or a disabled/bedridden patient, however, not permanently and not to the fullest extent.

The instances identified during the Survey in Vanadzor are noteworthy from the point of view of heating behavior. The data in Vanadzor presented in **Table 8** are distinguished by colors, as the number of HHs heating the apartment (237) differs from the data in Table 6 and 7 (252). The point is that according to the clarification presented by the interviewer of "Spitak Bazeh" NGO (Spitak), 15 of the HHs surveyed in Vanadzor had a heating option, even a modern BAXI type local system, however, due to certain financial difficulties they had not heated the apartment during the previous season at all. Following the requirements set out in the Guidelines for completing the questionnaire (see **Annex 2**), such cases were also marked with "0". At the same time, such HHs apply standard behavior in heating the apartment, i.e., they buy, install, use heating systems or modern stoves. So, the mentioned HHs are included in the further sections of this report as part of the "heated" HHs.

6. Gender and social vulnerability characteristics of heating-related poverty indicators

In 2016, with the joint efforts of the RA Statistical Committee and the World Bank, a system of ***multidimensional poverty measurement was introduced in Armenia***. By definition, poverty itself is a multidimensional phenomenon; it is not fully covered in terms of monetary poverty. Therefore, experts have developed a system of quality assessments through which the so-called "deprivations" faced by HHs are studied and measured. The latter (deprivations) has been described as *areas of human development where gaps in endowment are often persistent over time; hence, deprivations can negatively influence the future capacity of a household to escape poverty and vulnerability*. Accordingly, the study of deprivations characterizing multidimensional poverty complements the analysis of monetary poverty with non-monetary information.²⁰

One of the deprivations in Armenia is the inability of the households to provide heating to the apartment, considering that having affordable heating is not only important for the standard of living but relates to one's self-worth. At the same time, a deprivation on "healthy heating" has been introduced as a measure of multidimensional poverty, which includes the instances when a centralized heating system is absent or the household is incapable of providing heating of the apartment by means of electricity, natural or liquefied gas. Consequently, all HHs that use wood, coal, manure and other fuels for heating are considered poor.

²⁰ "Social Snapshot and Poverty in Armenia" 2020, section 2.7 - www.armstat.am/file/article/poverty_2020_e_2.pdf

Thus, the indicators of being deprived of the opportunity to heat the apartment and/or provide "healthy heating" are the important measures of multidimensional poverty in Armenia. By adding the lowest heating rate of 30% to the above-mentioned indicators, the more complete assessment of heating-related poverty/social vulnerability of the surveyed HHs will be ensured. Hence, as it was presented in the previous sections:

- ❖ **1.7% of HHs do not have any heating options and do not heat the apartment at all,**
- ❖ **7.9% of HHs heats the apartment with wood,**
- ❖ **73.1% of HHs are unable to provide full heating, of which 19.4% heat the apartment by 30%.**

In terms of poverty-related indicators of heating, it can be stated that the social vulnerability levels of the residents of the surveyed MABs is significantly high.²¹

Poverty rates related to heating of the surveyed HHs differ significantly between female-headed households and male-headed households, as well as according to socially vulnerable HHs, as evidenced by the data in *Table 9* and *Table 10*.

Table 9. Distribution of Socially Vulnerable FHHs and MHHs by Heating Poverty Measures

"Heating poverty" indicators	FHHs	Of which:			MHHs	Of which:		
		Gets family benefits	Has a person with a disability	Single pensioner		Gets family benefits	Has a person with a disability	Single pensioner
Total number of households in the group	504	76	53	96	1234	67	148	31
Including:								
HHs which do not heat the apartment	14	1	1	4	16	1	2	5
% (in the given group)	2.8	1.3	1.9	4.2	1.3	1.5	1.4	16.1
HHs which use wood for heating	41	11	4	6	94	8	22	3
% (in the given group)	8.1	14.5	7.5	4.2	7.6	11.9	14.9	9.7
Total poor HHs by heating indicator	55	12	5	10	110	9	24	8
% (in the given group)	10.9	15.8	9.4	10.4	8.9	13.4	16.2	25.8

Table 10. Distribution of socially vulnerable FHHs and MHHs by heating mode indicator

²¹ For comparison, the level of multidimensional poverty in Armenia is 22% (2019), which includes, in addition to the heating measure also 25 other indicators covering 5 areas characterizing the HHs' living standards.

Socially vulnerable HHs	FHHs which use heating in the apartment	Of which - those who used heating			MHHs which use heating in the apartment	Of which - those who used heating			Gender Coefficient (GC) for each group		
		100%	50%	30%			100%	50%	30%	100%	50%
Total number of households in the group	490	98	263	129	1218	357	646	215	0.68	1.01	1.49
%	100.0	20.0	53.7	26.3	100.0	29.3	53.0	17.7			
Including:											
Gets family benefits	75	19	34	22	66	34	25	7	0.49	1.20	2.76
%	100.0	25.3	45.3	29.3	100.0	51.5	37.9	10.6			
Has a person with a disability	52	15	23	14	146	47	78	21	0.89	0.83	1.88
%	100.0	28.8	44.2	27.0	100.0	32.2	53.4	14.4			
Single pensioner	92	13	39	40	26	4	6	16	0.92	1.84	0.71
%	100.0	14.1	42.4	43.5	100.0	15.4	23.1	61.5			

Heating-related poverty indicators show that FHHs are generally 1.2 times more vulnerable than MHHs (*Table 9*). At the same time, ***while the families receiving benefits are the most vulnerable in the group of FHHs (15.8%), the single male pensioners are much more vulnerable in the group of MHHs (25.8%).***

Only 20% of all FHHs heat the apartment to the fullest extent, while the same indicator of MHHs is 29.3%. As for HHs with 30% heating, FHHs are almost 1.5 times more vulnerable than MHHs by this indicator.

The gender inequality ratios related to the heating mode (hereinafter referred to as GIR), which are noted in brackets, are remarkably high in the following socially vulnerable groups:

- The capacities of FHHs receiving family benefits to provide full-scale (100%) heating is almost twice as lower as that of MHHs (0.49).
- The FHHs receiving benefits are almost 3 times more vulnerable than MHHs by the 30% heating mode indicator (2.76).
- In comparison with MHHs, a larger proportion of FHHs having a household member with disabilities, heat their apartments at the lowest heating rate of 30% (1.88).

- Single male pensioners are more vulnerable than single female pensioners by the indicator of the lowest heating rate (0.71)²², as the vast majority of MHHs (61.5%) can not ensure above 30% of heating.

Thus, the analysis of the heating mode indicator also shows that FHHs are generally more vulnerable than MHHs, furthermore, distinguishing the ***FHHs getting benefits and/or having a household member with disabilities as well as single female pensioners*** as FHHs with highest vulnerability.

Conclusions and recommendations

The analysis of the Survey findings allows to make the following conclusions and recommendations.

1. The mechanisms used for shortlisting the applications submitted by communities to participate in state subvention programs are actually based are pro-poor and social-inclusive. This is evidenced by social vulnerability and gender analysis of the Survey data. Therefore, it can be concluded that in all the surveyed communities, where implementation of energy efficiency measures is envisaged with Project co-financing, the level of social vulnerability and gender indicators of the beneficiaries is not lower, and in some communities - even higher than the national average.

Conclusion. The Project's involvement of in the communities included in the state subvention programs (co-financing of energy efficiency measures, technical assistance, support of awareness-raising activities, etc.) is preliminarily justified in terms of compliance of social status of the populations living in these communities with the Project's social and gender specific requirements.

Recommendation. The Project should continue its collaboration with the communities included in state subvention programs on energy efficiency measures, including by means of co-financing.

²² According to various scientific estimates, in large families "economies of scale" is observed, which is expressed by per capita consumption equivalence ratio. Thus, the methodology of the Integrated Household Living Standards Survey (ILCS) applied by the Statistical Committee of the Republic of Armenia uses two equivalence ratios: for adult members - 0.87, and for a child under the age of 14 - 0.65. Naturally, for one-person HH, this ratio is equal to "1". "Social Snapshot and Poverty in Armenia". [poverty_2020_e_6.pdf \(armstat.am\)](http://armstat.am/poverty_2020_e_6.pdf)

2. The most socially vulnerable households identified in the Survey will face difficulties in terms of participation by means of financing of the maintenance of thermally insulated/retrofitted MABs. In particular, HHs that do not have any heating options and/or do not heat their home will not be able to "evaluate" the cost savings in terms of heating, therefore, the purpose of their participation.

Conclusion. Financial participation of the most socially vulnerable, poor households (single pensioners, social benefit recipients, families having a household member with disabilities) in terms of ensuring the sustainability of the Project results is unlikely.

Recommendation. The project should support community leaders in developing and implementing specific mechanisms to engage poor, and the most socially vulnerable households in the future maintenance of energy-retrofitted MABs.

3. Due to the increase in average temperature resulting from climate change, the heating costs of HHs may be reduced for objective reasons (the length of the heating season is reduced, the number of very cold days is less, etc.). In this case, the interest of the communities in the inclusion of MABs thermal insulation measures in the applications for subvention programs may decrease. Moreover, it will be more difficult to mobilize the beneficiaries to provide financial resources for the maintenance of the MABs that have been thermally insulated, as the connection between the money saved for heating and the thermal insulation might not be "visible".

Conclusion. The energy efficiency indicators of beneficiary HHs residing in MABs that have undergone thermal insulation by the Project co-financing is likely to differ from the expected energy efficiency level.

Recommendation. "Related" indicators should be developed with the purpose of monitoring the Project outcomes, to measure the effectiveness of thermal insulation for HHs not only in terms of saving during the heating season, but also in terms of protection from the summer heat.

QUESTIONNAIRE

On social status of the residents (households) of the multi-apartment building included in the Community 2020 Subvention Program

Address _____

Fill in the line corresponding to the apartment number	Number of household's actual members /residents, <i>person</i>	Household receives family benefit Yes "+", No "-"	Head of the household Woman "W" Man "M"	Social characteristics of household's members				Heating means of the apartment		
				Number of women /girls/, <i>person</i>	Number of children under 18, <i>person</i>	Number of the persons with disability (PWD) and disability group, <i>person</i> Note: "D1", "D2", "D3" or «DC» - disabled child	Number of old-age (63+) pensioners, <i>person</i>	Fuel used: Gas "G" Electricity "E" Wood "W" Nothing "0"	Heating device: BAXI TURBO Heater "H" Other - "Other"	Heating mode: 100% 50% 30% 0
1	2	3	4	5	6	7	8	9	10	11
1.										
2.										
3.										
4.										
5.										
6.										
7.										
8.										
9.										
10.										
11.										
12.										
13.										
14.										
15.										
.....										

GUIDELINE

How to fill in the questionnaire

Please review this Guideline before you fill in the questionnaire. The guideline is compiled according to the questionnaire numbers.

1. The questionnaire is filled in according to the apartment number. If in the given apartment:
 - a. lives nobody,
 - b. lives the family which rents it,
 - c. it is used for business purpose,
 - d. the resident refuses to answer the questionnaire, then

you need to take the apartment number into a circle and write the following words in front of it:

- a. "closed door",
- b. "rented",
- c. "non residential"
- c. "refused"

If the resident is not at home at the time of the inquiry, please, double-visit to fill in the data of the relevant apartment.

2. The actual number of people living in the apartment is filled in by simply asking the resident, "How many people live here permanently?".

If someone is registered but mainly does not live in that apartment, then he/she shouldn't be considered, and if he/she is not registered but lives there, he/she should be included in the number of household members.

3. The issue of benefits refers to only family benefits. ***Family benefit*** is assigned to a family with a certain point of vulnerability assessed in accordance with the State Law on Family Benefits.

If the resident informs that her/his family is registered in the benefits system, but does not receive benefits because the points are not enough, then also mark "+" (it means that the resident considers her/his family as a poor).

4. You should just ask the resident about the head of the family. The wife (or husband) of the family very often mentions the mother-in-law (or mother), mostly if she is widow, as the head of the family, so it should be marked "W".

If the head of the family is the man who works abroad (i.e. he is labor migrant), then it should also be marked "W".

5. You should register the total number of women living in the household, including daughters and girl-children, as well as grandmothers, sisters, and other female relatives if they live in the given apartment.
6. If the family has several children, ***mention only the number of children under 18 in this column.***
7. If there is one or more disabled, mention each of them in accordance with the procedure, e.g. "D2" + "DC", or "D3" + "D2", etc.

8. Mention only pensioners in this column, namely the ones who receive employment (63+ years old) or social (65+ years old) pensions. Pensioners who are disabled or have lost a breadwinner should not be registered here.

The data filled in this column will, in fact, show the age structure of the population, i.e. the number of residents aged 63+.

9. Questions about apartment heating are very important to assess the social impact of the projects on the residents of the buildings involved in the community thermal insulation project. As the heating season has not started yet this year, the question will be about last year.

If the resident says that he/she did not heat the apartment last year, it is marked "0". If the resident says he/she used several types of fuel, then the type of fuel he/she considers to be the main one used to heat the apartment last year will be recorded. If the resident uses other fuel as well (in parallel with the main one), then mention it in brackets.

10. Grouped symbols were used in this question. Naturally, BAXI system is a popular term, so it can be a local heating system (heating boiler) with any other name (Squirrel, Fondital, EuroTerm or other). The same refers to TURBO gas heaters.

Any local heating system is registered with BAXI mark; any gas heater – with TURBO mark, and electric and wood heaters are registered with "H" mark. If the apartment is heated by an air conditioner (which will be rare), also mark "H". Any other (differ from the above-mentioned) device used for heating should be noted as "Other".

11. To record the percentage of heating mode, the resident is asked two questions:
- a. Do you heat the whole apartment or certain rooms?
 - b. Do you heat all day or at certain hours?

If the resident reports that he/she mainly heats the whole apartment for almost the whole day, then indicate "100%". In the other two cases, help the resident to estimate in what percentage he/she heats the apartment - 50 or 30? If he/she switches the system on for the whole surface of the apartment for a few hours, consider it 50%, if he/she heats one room for a few hours, then - 30%, if he/she constantly heats one or two rooms - 50%.

The sample questionnaire should be filled in as many lines as there are apartments in the building at the given address. Use a separate questionnaire for each address, matching in advance the number of lines with the number of apartments in the building. ***Fill in the questionnaire manually*** based on the answers of the resident. Ask the questions only to any adult member of the household, preferably the housewife. Do not forget to fill in the address of the building. The address and apartment number will be a guide for further verification of collected data, as well as for calculating the energy savings of the family after the building is insulated.

ANNEX 3.

ANALYTICAL TABLES

TABLE 1. Distribution of surveyed households (HHs) and population by RA regions and communities.

By regions

NN	Regions (marzes)	Number of the surveyed HHs	Number of members of the surveyed HHs, <i>persons</i>	Share in regions, %	
				<i>by HHs</i>	<i>by population</i>
1.	Syunik	956	3327	55.0	57.4
2.	Lori	684	2098	39.3	36.2
3.	Aragatsotn	41	138	2.4	2.4
4.	Tavush	33	121	1.9	2.1
5.	Ararat	24	113	1.4	1.9
Total		1738	5797	100.0	100.0

By communities

NN	Communities	Number of the surveyed HHs	Number of members of the surveyed HHs, <i>people</i>	Share in communities, %	
				<i>by HHs</i>	<i>by population</i>
Syunik marz (region)					
1.	Kajaran	956	3327	55.0	57.4
Lori marz (region)					
2.	Vanadzor	265	809	15.2	14.0
3.	Tashir	188	522	10.8	9.0
4.	Akhtala	154	510	8.8	8.8
5.	Spitak	48	154	2.8	2.6
6.	Stepanavan	29	103	1.7	1.8
Aragatsotn marz (region)					
7.	Ashtarak	41	138	2.4	2.4
Tavush marz (region)					
8.	Ijevan	33	121	1.9	1.9
Ararat marz (region)					
9.	Vedi	24	113	1.4	1.4
Total		1738	5797	100.0	100.0

TABLE 2. Demographic profile of the members of surveyed households by regions and communities.

By regions

By communities

Regions Communities	Number of members of the surveyed HHs, people	Of which number of:			Share in percentage, %		
		Women Women (girls)	Children Children <18 years	Pensioners Pensioners >63	Women Women (girls)	Children Children <18 years	Pensioners Pensioners >63
Syunik	3327	1674	744	447	50.3	22.4	7.7
Kajaran	3327	1674	744	447	50.3	22.4	7.7
Lori	2098	1151	498	370	54.9	23.7	17.6
Vanadzor	809	427	178	166	52.8	22.0	20.5
Aragatsotn	138	71	28	18	51.4	20.3	13.0
Iashir	522	302	126	102	57.9	24.1	19.5
Tavush	121	60	27	12	49.6	22.3	9.9
Akhkala	510	280	131	58	54.9	25.7	11.3
Ararat	113	51	34	17	45.1	30.1	15.0
Spitak	154	86	41	16	55.8	26.6	10.4
Total	5797	3007	1331	864	51.9	23.0	14.9
Stepanavan	103	56	22	28	54.4	21.4	13.0
Ashtarak	138	71	28	18	51.4	20.3	13.0
Ijevan	121	60	27	12	49.6	22.3	9.9
Vedi	113	51	34	17	45.1	30.1	15.0
Total	5797	3007	1331	864	51.9	23.0	14.9

TABLE 3. Indicators of Social Vulnerability of the surveyed households by regions and communities.

By regions

Regions	Number of the surveyed HHs	Of which the number of HHs:			Share in percentage, %		
		Receiving the Family Benefits (FB)	Having the member(s) with disability	Alone pensioners	Receiving the Family Benefits (FB)	Having the member(s) with disability	Alone pensioners
Syunik	956	24	68	55	2.5	7.1	5.8
Lori	684	113	110	68	16.5	16.1	9.9
Aragatsotn	41	2	4	1	4.9	9.8	2.4
Tavush	33	2	7	0	6.1	17.1	-
Ararat	24	2	12	3	8.3	50.0	12.5
Total	1738	143	201	127	8.2	11.6	7.3

By communities

Communities	Number of the surveyed HHs	Of which the number of HHs:			Share in percentage, %		
		Receiving the Family Benefits (FB)	Having the member(s) with disability	Alone pensioners	Receiving the Family Benefits (FB)	Having the member(s) with disability	Alone pensioners
Kajaran	956	24	68	55	2.5	7.1	5.8
Vanadzor	265	24	28	25	9.1	10.6	9.4
Tashir	188	47	28	24	25.0	14.9	12.8
Akhtala	154	19	29	12	12.3	18.8	7.9
Spitak	48	15	17	4	31.2	35.4	8.3
Stepanavan	29	8	8	3	27.6	27.6	10.3
Ashtarak	41	2	4	1	4.9	9.8	2.4
Ijevan	33	2	7	0	6.1	17.1	-
Vedi	24	2	12	3	8.3	50.0	12.5
Total	1738	143	201	127	8.2	11.6	7.3

TABLE 4. Gender Indicators of the surveyed Female-headed and Male-headed households by communities.

Communities	Female-headed and Male-headed HHs			Gender composition of FHHs			Gender composition of MHHs		
	Number of female-headed HHs (FHHs)	Number of male-headed HHs (MHHs)	Share of FHHs, %	Total number of FHHs' members	Of which:		Total number of MHHs' members	Of which:	
					Number of women (girls)	Share of women (girls), %		Number of women (girls)	Share of women (girls), %
Kajaran	171	785	17.9	345	258	74.8	2982	1416	47.5
Vanadzor	134	131	50.6	383	241	62.9	426	186	43.7

Tashir	78	110	41.5	141	112	79.4	381	190	49.9
Akhtala	53	101	34.4	122	83	68.0	388	197	50.8
Spitak	25	23	52.1	73	48	65.8	81	38	46.9
Stepanavan	10	19	34.5	25	18	72.0	78	38	48.7
Ashtarak	20	21	48.8	62	38	61.3	76	33	43.4
Ijevan	7	26	21.2	20	12	60.0	101	48	47.5
Vedi	6	18	25.0	27	12	44.4	86	39	45.3
Total	504	1234	29.0	1198	822	68.5	4599	2185	47.5

TABLE 5. Social Vulnerability Indicators of the surveyed FHHs and MHHs by communities.

Communities	Female-headed HHs (FHHs)			Male-headed HHs (MHHs)			Share of FHHs in the total number of HHs		
	Receiving the Family Benefits	Having the member(s) with disability	Alone pensioners	Receiving the Family Benefits	Having the member(s) with disability	Alone pensioners	Receiving the Family Benefits	Having the member(s) with disability	Alone pensioners
Kajaran	13	9	41	11	59	14	54.2	13.2	74.5
Vanadzor	12	16	19	12	12	6	50.0	57.1	76.0
Tashir	23	13	21	24	15	3	48.9	46.4	87.5
Akhtala	15	5	10	4	24	2	78.9	17.2	83.3
Spitak	8	6	3	7	11	1	53.3	35.3	75.0
Stepanavan	3	2	2	5	6	1	37.5	25.0	66.7
Ashtarak	2	0	0	0	4	1	100.0	-	-
Ijevan	0	0	0	2	7	0	-	-	-
Vedi	0	2	1	2	10	2	-	16.7	33.3
Total	76	53	97	67	148	30	53.1	26.4	76.4

TABLE 6. Main Indicators of “Heating Poverty” of the surveyed HHs by communities

(the recalling period for the HHs’ answers was the previous heating season)

Communities	Number of the surveyed HHs	The HHs which didn’t heat their apartments at all		The HHs which used wood for heating		Total number of HHs which didn’t heat or used wood for heating		The HHs which used “handcrafted” stoves and heaters for heating	
		Number	%	Number	%	Number	%	Number	%
Kajaran	956	6	0.6	35	3.7	41	4.3	43	4.5
Vanadzor	265	13	4.9	3	1.2	16	6.1	43	16.2
Tashir	188	8	4.2	2	1.1	10	5.3	116	61.7
Akhtala	154	2	1.3	88	57.1	90	58.4	98	63.6
Spitak	48	0	-	2	4.2	2	4.2	4	8.3
Stepanavan	29	1	3.5	3	10.3	4	13.8	11	37.9
Ashtarak	41	0	-	0	-	0	-	0	-
Ijevan	33	0	-	2	6.1	2	6.1	16	48.5

Vedi	24	0	-	0	-	0	-	0	-
Total	1738	30	1.7	135	7.8	165	9.5	331	19.0

TABLE 7. Distribution of HHs heated their apartments *by used fuel for heating and by communities.*

(the recalling period for the HHs' answers was the previous heating season)

Communities	HHs which heated their apartments		Number of HHs heated their apartments by:			Share in percentage, %		
	Number	%	Gas*	Electricity	Wood**	Gas	Electricity	Wood
Kajaran	950	99.4	684	231	35	72.0	24.3	3.7
Vanadzor	252	95.1	146	103	3	57.9	40.9	1.2
Tashir	180	95.7	155	23	2	86.1	12.8	1.1
Akhtala	152	98.7	49	15	88	32.2	9.9	57.9
Spitak	48	100.0	40	6	2	83.3	12.5	4.2
Stepanavan	28	96.6	19	6	3	67.9	21.4	10.7
Ashtarak	41	100.0	38	3	0	92.7	7.3	-
Ijevan	33	100.0	24	7	2	72.7	21.2	6.1
Vedi	24	100.0	21	3	0	87.5	12.5	-
Total	1708	98.3	1176	397	135	68.9	23.2	7.9
* - including the HHs which using also electricity heaters (in total 11 HHs);								
** - including the HHs which using also gas stoves or electricity heaters (in total 3 HHs).								

TABLE 8. Gender and social vulnerability aspects of the surveyed HHs *by used fuel for heating.*

By social vulnerability indicators	FHHs heated their apartments	FHHs heated their apartments by:			MHHs heated their apartments	MHHs heated their apartments by:		
		Gas	Electricity	Wood		Gas	Electricity	Wood
Total	490	281	168	41	1218	895	229	94
%	100.0	57.3	34.3	8.4	100.0	73.5	18.8	7.7
<i>of which:</i>								
Receiving the Family Benefits	75	39	25	11	66	47	11	8
Having the member(s) with disability	52	32	16	4	146	99	25	22
Alone pensioners	92	42	44	6	26	9	14	3
<i>Distribution of HHs of each vulnerable group by used fuel, %</i>								
Receiving the Family Benefits	100.0	52.0	33.3	14.7	100.0	71.2	16.7	12.1
Having the member(s) with disability	100.0	61.5	30.8	7.7	100.0	67.8	17.2	15.0
Alone pensioners	100.0	45.7	47.8	6.5	100.0	34.6	53.9	11.5

TABLE 9. "Heating Poverty" of socially vulnerable FHHs and MHHs.

Indicators of “Heating Poverty”	FHHs	Of which:			MHHs	Of which:		
		Receiving the Family Benefits	Having the member(s) with disability	Alone pensioners		Receiving the Family Benefits	Having the member(s) with disability	Alone pensioners
Total number of HHs of each group	504	76	53	96	1234	67	148	31
Of which:								
HHs which didn't heat their apartments at all	14	1	1	4	16	1	2	5
% (within each group)	2.8	1.3	1.9	4.2	1.3	1.5	1.4	16.1
HHs which used wood for heating	41	11	4	6	94	8	22	3
% (within each group)	8.1	14.5	7.5	4.2	7.6	11.9	14.9	9.7
Total number of HHs in “Heating Poverty”	55	12	5	10	110	9	24	8
% (within each group)	10.9	15.8	9.4	10.4	8.9	13.4	16.2	25.8

TABLE 10. Distribution of HHs heated their apartments by heating devices and by communities.

Communities	HHs which heated their apartments	Number of HHs heated their apartments by:			Share in percentage, %		
		BAXI*	TURBO**	Heaters***	BAXI*	TURBO**	Heaters***
Kajaran	950	654	31	265	68.8	3.3	27.9
Vanadzor	252	110	10	132	43.6	4.0	52.4
Tashir	180	48	1	131	26.7	0.5	72.8
Akhtala	152	17	23	112	11.2	15.1	73.7
Spitak	48	15	23	10	31.3	47.9	20.8
Stepanavan	28	11	0	17	39.3	-	60.7
Ashtarak	41	13	25	3	31.7	61.0	6.3
Ijevan	33	9	8	16	27.3	24.2	48.5
Vedi	24	9	12	3	37.5	50.0	12.5
Total	1708	886	133	689	51.9	7.8	40.3
* - includes all types of commercial local heating system with installed gas boiler.							
** - includes all types of commercial gas heaters.							
*** - includes all types of handcrafted or home-made heaters operating on any fuel (wood, electricity, gas), as well as other means for heating (gas or electricity stoves, etc.).							

Socially vulnerable HHs	FHHs that heated their apartments	Of which heated by:			MHHs that heated their apartments	Of which heated by:			Gender coefficient of each group*		
		BAXI	TURBO	Heaters		BAXI	TURBO	Heaters	BAXI	TURBO	Heaters
Total number of HHs of each group	490	171	51	268	1218	715	82	421	0.59	1.55	1.58
%	100.0	34.9	10.4	54.7	100.0	58.7	6.7	34.6			
Of which:											

HHs receiving the Family Benefits	75	16	10	49	66	15	8	43	0.94	1.10	1.00
%	100.0	21.3	13.3	65.4	100.0	22.7	12.1	65.2			
HHs having the member(s) with disability	52	18	2	32	146	59	25	62	0.86	0.22	1.45
%	100.0	34.6	3.8	61.6	100.0	40.4	17.1	42.5			
HHs of alone pensioner	92	21	6	65	26	5	2	19	1.19	0.84	0.97
%	100.0	22.8	6.5	70.7	100.0	19.2	7.7	73.1			
* - calculated as a relation of the shares of FHHs and MHHs in each group.											

TABLE 11. Distribution of FHHs and MHHs heated their apartments *by heating devices and by socially vulnerable HHs.*

TABLE 12. Distribution of FHHs and MHHs heated their apartments *by heating mode* and by socially vulnerable HHs.*

Socially vulnerable HHs	FHHs that heated their apartments	Of which heated the apartment on:			MHHs that heated their apartments	Of which heated the apartment on:			Gender coefficient of each group		
		100%	50%	30%		100%	50%	30%	100%	50%	30%
Total number of HHs of each group	490	98	263	129	1218	357	646	215	0.68	1.01	1.49
%	100.0	20.0	53.7	26.3	100.0	29.3	53.0	17.7			
Of which:											
HHs receiving the Family Benefits	75	19	34	22	66	34	25	7	0.49	1.20	2.76
%	100.0	25.3	45.3	29.3	100.0	51.5	37.9	10.6			
HHs having the member(s) with disability	52	15	23	14	146	47	78	21	0.89	0.83	1.88
%	100.0	28.8	44.2	27.0	100.0	32.2	53.4	14.4			
HHs of alone pensioner	92	13	39	40	26	4	6	16	0.92	1.84	0.71
%	100.0	14.1	42.4	43.5	100.0	15.4	23.1	61.5			
* - The heating mode was assessed by residents based on the generalized perception of the answers to the two questions, namely: a) Do you heat the whole apartment or certain rooms? b) Do you heat all day or at certain hours? Depending on the number of heated rooms and heating hours, with the help of the interviewer, the resident estimated the heating mode at the following percentages: 100, 50 and 30.											

