

# Household Assets and Fuelwood Use

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### 1 Household assets

**Homes are perhaps the most important asset owned by households. In 2022, most of the 800,604 Armenian households owned their dwelling (about 89.4%),** as shown in Figure 1, with only about 5.9% of homes renting and 4.7% with other forms of tenure (ARMSTAT, 2023). Also, about 97% of households lived in houses or apartments, as opposed to hostel; railcar / container; other temporary lodging; or “other” (3% combined). Houses averaged 112.0 m<sup>2</sup>, while apartments averaged 68.3 m<sup>2</sup>. As expected, 96.2% of apartments were located in urban areas, with about half of them in Yerevan (55.3%). Houses, on the other hand, were located mostly in rural areas (65.8%), with about 13.4% of them located in Yerevan.

Figure 1. Dwelling ownership by Marz

[CHART]

Source: Integrated Living Conditions Survey, 2022 (ARMSTAT, 2023).

**The rental market is small and an urban phenomenon, with 92% of rentals occurring in that area.** The average rent for a house was AMD 56,613.6 (about USD 143.1) with an average price of AMD 882.4 (USD 2.23) per square meter. Conversely, apartments were rented at a more expensive mean of AMD 82,124.2 (USD 207.6) with an average price of AMD 1,447.8 (USD 3.7) per square meter.

**Owned dwellings are an asset from which households derive welfare. Non renters derived an average of AMD 54,338.1 (USD 137.33) in monthly imputed rent.** The emergent rental market information was used to impute rent to non-renters using a log linear modeling approach described by Ceriani et al. (2019), in which imputed rent was predicted using a combination of household characteristics (urban/rural, Marz, number of rooms, presence of an indoor toilet, number of household, square meters, type of dwelling, members) and head of household characteristics (sex, highest completed schooling level, age group). These values

are shown in Table 1 by decile and for the whole country. Net present value of that monthly imputed rent (for a 2050 horizon) was also estimated at AMD 17.3 million (USD 43,881.5), using a 5% annual discount rate and a 5% average inflation rate.

Table 1. Imputed rent and average net present value (2050 horizon) for non-renters

Decile	Average dwelling area (m <sup>2</sup> )	Average imputed rent (Dram per month)	Average net present value of
1	89.4	45,632.3	14,565,638.7
2	91.1	51,149.9	16,326,813.0
3	91.1	52,635.7	16,801,095.0
4	89.5	55,010.5	17,559,108.4
5	88.3	53,896.9	17,203,666.3
6	87.2	54,230.5	17,310,143.3
7	93.0	54,532.6	17,406,560.2
8	89.1	52,558.3	16,776,366.9
9	86.7	56,791.0	18,127,439.9
10	87.5	59,735.1	19,067,188.6
Country	89.0	54,338.1	17,344,482.6

Source: author based on log linear imputed rent approach (Ceriani et al., 2019)

**A little over a third (288,718 or 36.1%) of households owned a car in 2022 and used it in the month prior to the survey.** However, a higher percentage of homes in rural areas (47.5%) own a vehicle. Given the characteristics of rural areas and the availability of public transportation, it is a particularly important asset for household mobility. This also means that these households are exposed to energy transition risks derived from changes to prices of fuels and technological changes in car technologies (TNFD, 2023).

**Armenians access water mainly through centralized water supply (95.6% or 765,728 households),** 2.7% of households have their own system of water supply, and the remaining 1.6% access water through spring water or well; delivered water; bought water; or “other”. Urban households spend an average of about AMD 2,506.5 (USD 6.3) on water, while rural households spend about AMD 1,790.1 (USD 4.5).

**Most homes (99.8% or 798,835 households) access electricity through the national grid, with only a small share 0.2% using solar panels.** Both urban and rural homes spend about the same average expenditure on electricity of about AMD 7,948.3 (USD 20.1).

## 2 Household exposure to the agricultural sector

**About a fourth of all Armenian households (23.4%) had a monthly agricultural income component; a number that rises to 61% when discussing rural households,**

**with that income representing an average 22.6% of total income.** Overall, 91.3% of those 187,176 households that derived an agricultural income were located in rural areas. This income averaged AMD 72,275.2 (USD 182.67) and represented an average of 23.7% of total income for rural homes. These same figures averaged AMD 47,853.1 (USD 120.94) and 12.0% in urban areas, respectively. When it comes to deciles, perhaps unintuitively, the average share of total income that comes from agriculture rises from 20.7% for the first decile to 26.3% for the tenth, as shown in Table 2.

Table 2. Average agricultural income

Decile	Average total income	Average agricultural Income	Average agricultural income share of total income
1	272,739.6	54,013.3	20.7%
2	277,204.7	47,470.2	19.3%
3	308,608.9	75,184.5	22.0%
4	280,508.0	51,349.7	18.3%
5	306,497.2	68,414.4	24.0%
6	301,499.4	69,378.7	22.8%
7	315,422.2	72,267.4	21.5%
8	337,909.6	78,487.8	25.5%
9	295,644.2	78,357.8	23.5%
10	315,725.2	92,134.7	26.3%
Country	303,234.5	70,156.4	22.6%

Source: author based on Integrated Living Conditions Survey, 2022 (ARMSTAT, 2023).

Note: column three is the average of the share calculated at the household level and weighted by population weights, not column two divided by column one.

**While only 23.4% of households, derive income from the agricultural sector, exposure to agriculture is larger, since 41% of households use land for agricultural purposes (owned and/or rented).** A total of 98% out of the 328,438 households that use agricultural land own their plots, and 5.3% of those (also) rented. The average area used by households for agricultural purposes is 7,329.9 m<sup>2</sup>, of which an average 70.6%, or 5,551.2 m<sup>2</sup>, is used for crops. This suggests that own consumption of agricultural output plays a role in Armenian incomes. Table 3 shows that for households without agricultural sales, 4.3% of income can be attributed to imputed use of agricultural products for own consumption. More generally, this table shows the shares of household income from different sources, for households with agricultural land, with or without deriving income from that land, compared with households without agricultural land. It is evident that public pensions and benefits plays a much bigger role (29.7%) for all households, along with hired employment (41.3%).

Table 3. Average shares of sources of income for households with and without agricultural land

	Households with a gricultural land (owned or not) with a gricultural income	Households with a gricultural land (owned or not) with no a gricultural income	Households without a gricultural land (owned or not) with or without a gricultural income	All households
Number of households	184,738	143,700	472,166	800,604
Average total income (Dram)	302,290.3	223,874.8	247,434.9	255,863.9
Average share of income coming from:				
Sale of a gricultural products	22.8%	0.0%	0.1%	5.3%
Imputed use of a gricultural products for own consumption	8.7%	4.3%	0.6%	3.2%
Hired employment	28.5%	40.5%	46.6%	41.3%
Self - employment	10.2%	9.2%	8.0%	8.7%

	Households with a gricultural land (owned or not) with a gricultural income	Households with a gricultural land (owned or not) with no a gricultural income	Households without a gricultural land (owned or not) with or without a gricultural income	All households
Property (rent, in- ter- est, eq- uity gain)	0.1%	0.1%	0.2%	0.2%
Public pen- sions and ben- efits	22.2%	33.8%	31.5%	29.7%
Transfers	7.2%	10.5%	11.6%	10.4%
Other	0.7%	1.3%	1.4%	1.2%
All income shares	100%	100%	100%	100%

Source: author based on Integrated Living Conditions Survey, 2022 (ARMSTAT, 2023).

### 3 Household reliance on firewood for heating

#### 3.1 Expenditure elasticities for fuelwood

Most homes in Armenia use natural gas for heating (61.9% or 495,203 households), but an important 23.8% (190,884 households) use wood for heating, followed by 21.7% that use electricity and 8.2% pressed dung. Negligible percentages of households use liquefied gas or coal (0.2% and 0.9% respectively). In rural areas, 51.5% of rural homes (143,724 households) use wood for heating, which correlates with the 54.8% of rural households