

**REPORT ON NATIONWIDE SURVEY FINDINGS:
DEFORESTATION AND PROTECTION OF FORESTS**

Prepared for

The EcoArmenia Consortium Save Our Forests Campaign

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Executive Summary

The EcoArmenia Consortium has initiated a campaign aimed at addressing the multi-faceted problem of deforestation in Armenia through its Save Our Forests Campaign. The overall campaign will include a comprehensive program that addresses joint natural resource management, economic development and good governance in Armenia. The Turpanjian Center for Policy Analysis (TCPA) at the American University of Armenia was contracted to conduct a survey in order to provide information for the design of the public awareness campaign. The purpose of this nationwide study is to assess the understanding and level of knowledge in the public about forests and deforestation, to determine the Armenian public's beliefs, attitudes, and behavior toward the protection of forests, and to understand wood use patterns.

Nearly 88 percent of the respondents are worried that their children will live in a worse environment that they do now. More respondents disagree than agree with the statement "the so-called ecological crisis facing Armenia has been exaggerated," with 71 percent disagreeing. Nearly all respondents believe that deforestation is a significant problem in Armenia. More than half of the respondents believe that the condition of forests has been getting worse in the past five years in Armenia. Only 43 percent of the respondents are at least somewhat satisfied with the protection of forests in Armenia, and almost all respondents claim that the Armenian Government should make the protection of forests a priority problem to solve.

Nine in ten respondents are interested in the protection of forests in Armenia. Nearly all respondents believe that everyone in Armenia must take personal responsibility for the environment and that forests should be saved for the benefit of the environment and people. However, two out of ten respondents would not report about the illegal cutting of forest if they observed it, with more residents of forest adjacent villages than residents of non-forest adjacent villages declining to make such reports. Almost all respondents stated that the Armenian Government should not allow the exporting of wood. Respondents believe that wood businesses exporting wood outside Armenia or selling it in Armenia and non-villagers who cut wood to sell are problems that cause deforestation to a great extent, while grazing of animals is considered as the least problematic. However, almost all respondents indicated that it is fine to harvest wood from forests as long as it is properly managed in a sustainable way.

The importance of forests is understood by the majority of respondents, with 83 percent reporting that forests are important for ensuring a supply of wood long-term. Nine in ten respondents believe that the decrease of forest land can result in the loss of mushrooms, herbs and berries, micro-climate change, and loss of biodiversity. The top four negative effects of deforestation indicated by respondents are micro-climate change, desertification, drying of springs and rivers, and loss of biodiversity. Sixty percent of the respondents indicated the shortage of oxygen as the major impact of the loss of forests on themselves and their families.

Seven in ten respondents mentioned that they use forests for relaxation and recreation. Fewer respondents, five in ten, go to forests for gathering non-wood products like herbs. Only one in ten reported going to forests for gathering wood for own home fuel use.

About 30 percent of the respondents use wood at home as fuel for heating and/or cooking, with more rural and marz residents than urban and Yerevan residents using wood for such purposes. The majority of the respondents who ever use wood at home live in marzes with large forest areas. Four in ten respondents using wood at home buy it from trees cut in outside areas, with more residents of non-forest adjacent villages than residents of forest adjacent villages purchasing it.

On average, 68 percent of heating of the houses and 22 percent of cooking come from burning wood. Interviewed households use in total 6.7 cubic meters of wood for heating and cooking per year on average. They spend, on average, about 8,700 drams on wood for fuel monthly.

Making gas available to all households in Armenia is indicated as the top solution that might help to save forests in Armenia. Nearly 66 percent of the rural respondents believe that rural residents would stop using wood as fuel, if they were provided with gas, while 25 percent believe that cheaper gas would keep them from using wood. Nine in ten respondents believe that poverty reduction will decrease the illegal use of forests for firewood.

Background

The EcoArmenia Consortium has initiated a campaign aimed at addressing the multi-faceted problem of deforestation in Armenia through its Save Our Forests Campaign. The Consortium is made up of some of the most active and effective environmental organizations in Armenia – the World Wildlife Fund Armenia, the Environmental Conservation and Research Center at the American University of Armenia, the Armenia Tree Project, and the Armenian Forests NGO. The overall campaign will include a comprehensive program that addresses joint natural resource management, economic development and good governance in Armenia. The Save Our Forests campaign aims to introduce and advocate for a series of solutions aimed at addressing this multifaceted problem of deforestation in Armenia.

The Turpanjian Center for Policy Analysis (TCPA) at the American University of Armenia was contracted to conduct a survey in order to provide information for the design of the public awareness campaign in the framework of the Save Our Forests initiative. The purpose of this nationwide study is to assess the understanding and level of knowledge in the public about forests and deforestation, to determine the Armenian public's beliefs, attitudes, and behavior toward the protection of forests, and to understand wood use patterns.

Methodology

In order to create a representative sample of Armenian citizens between the ages of 18 and 75, the ROA National Statistical Service was contacted for current information on the following parameters: 1) population by marzes; 2) population by rural and urban residents within each of the ten marzes and; 3) population by the twelve communities in Yerevan. Households were selected from the city of Yerevan and from the ten marzes proportionately to reflect the most recent ROA census figures. From each marz, one city and one village participated in the survey. For each of the ten cities, detailed maps produced by the ROA Geodesy and Cartography Center were used.¹ A map indicating buildings in Yerevan by community was employed. Each of the ten marz cities and the twelve Yerevan communities was contacted in order to determine the proportion of apartment buildings and single-household dwellings. For each of the marz cities and the Yerevan communities, the maps were employed to randomly select buildings using systematic random sampling. On site in the ten cities and Yerevan, for each apartment building one household per building was selected using simple random sampling.

One of the requirements of this study was to interview residents of both forest adjacent and non-forest adjacent villages. Forest adjacent villages² were selected for five marzes with the largest forest areas³ (Tavush, Lori, Syunik, Gegharkunik and Kotayk marzes). For each of these five marzes sampling frames of only forest adjacent villages were created with the assistance of the Environmental Conservation and Research Center (ECRC) at the American University of Armenia.⁴ For each of these five marzes, one forest adjacent village was randomly selected. In the remaining five marzes one village per marz was randomly sampled. Each of the ten villages

¹ These were produced originally for the ROA 2001 census.

² Defined as villages located within 5 km from forests

³ As of January 1, 1999, according to the ROA National Statistical Service

⁴ Retrieved from the forests map of Armenia through Geographical Information System (GIS) program

was contacted to determine the number of households and households were selected on site using systematic random sampling. The availability of gas in the village was also determined beforehand. As a result, six villages with gas and four villages without gas were included in the survey.

Within households, respondents were selected randomly. See Tables 1 through 5 for the numbers of interviews conducted by marz, urban versus rural sampling populations, forest adjacent versus non-forest adjacent sampling populations, and gas availability in the villages. Fifty-one percent of the respondents in marz cities and about 14 percent of the respondents in Yerevan communities are living in single-household dwellings.

TCPA designed custom measures and an original questionnaire based on the information needs of EcoArmenia. A search was made by TCPA for appropriate surveys on forests and deforestation in other countries that could provide reliable and valid indicators.⁵ A pre-test was conducted of all measures and adjustments were made accordingly. A total of 1006 interviews were conducted from December 6 through December 19, 2006.⁶ All data, both quantitative and recoded qualitative, were input in SPSS for analysis.

At the completion of interviews, participants in the survey were provided with an information leaflet with an overview of Save Our Forests Campaign and contacts of organizations involved in the initiative.

Findings

This section summarizes the survey findings and is divided into four sections: attitudes toward deforestation and protection of forests, levels of knowledge about deforestation, use of forests, and use of wood and non-wood fuels.

The mean age of respondents was 45 years (see Table 32) and 32 percent were male and 68 percent female (see Table 31). Thirty-two percent of the respondents had completed 10 years secondary school and another 56 percent had attended or graduated from a university, college, or technical school (see Table 33). Crosstabs 1a through 14b display the findings by various demographics.

⁵ Two measures were adapted from the questionnaires of the consumer survey of the EU FAIR Project FP4-CT95-766 conducted in 1996 in the UK, and of the public opinion survey on sustainable forest management conducted in 2005 in Canada by the Collaborative for Advanced Landscape Planning (CALP) at the University of British Columbia, Canada.

⁶ Refusal rate is 8.5 percent.

Attitudes toward deforestation and protection of forests

Eighty-eight percent of the respondents indicated that they are interested in the protection of forests in Armenia (see Table 6). Urban and Yerevan residents are more interested in the protection of forests in Armenia than rural and marz residents.⁷ Similarly, male respondents are somewhat more interested than female respondents.⁸ There is a weak negative correlation between age and level of interest with older respondents being somewhat more interested.⁹ No statistically significant differences were found for forest adjacent villages versus non-forest adjacent villages, or villages with gas versus villages without gas.

Nearly 44 percent of the respondents indicated that they are “very unsatisfied” with the protection of forests in Armenia (see Table 13) with 43 percent stating that they were at least “somewhat satisfied” with the protection of forests in Armenia. Statistically significant differences were found between urban and rural residents and Yerevan and marz residents with urban and Yerevan residents being more dissatisfied with the protection of forests in Armenia.¹⁰ Similarly, residents of non-forest adjacent villages and residents of villages with gas are more dissatisfied than residents of forest adjacent villages and residents of villages without gas.¹¹ Men are somewhat more dissatisfied than women.¹²

Importance of forests for Armenian society

In a set of separate questions respondents were asked about the importance of forests for Armenian society. About 96 percent of the respondents indicated that forests serve three important purposes: preservation of the long-term diversity of plants and animals, protection of society against negative effects such as desertification, soil erosion and floods, and insurance of the long-term supply of places for recreation and relaxation. Eighty-three percent of the respondents said that forests are important for ensuring a supply of wood long-term (see Tables 11a through 11d and Table 12). Figure A displays the percentages of how respondents understand the importance of forests.

The role of forests in ensuring the long-term supply of places for recreation and relaxation is more important for residents of villages with gas than for residents of villages without gas.¹³ More importance in ensuring a supply of wood long-term is given to forests by rural and marz residents than by urban and Yerevan residents.¹⁴ Similarly, this importance is higher for respondents living in single-household dwellings than for respondents living in apartment buildings and for residents of forest adjacent villages than for residents of non-forest adjacent villages.¹⁵

⁷ Statistical significance determined by t-tests; both less than .05.

⁸ Statistically significant difference using t-test; sig=.036.

⁹ Pearson’s Product Moment Correlation is -.165; sig=.000.

¹⁰ Statistical significance determined by t-tests; both sig=.000.

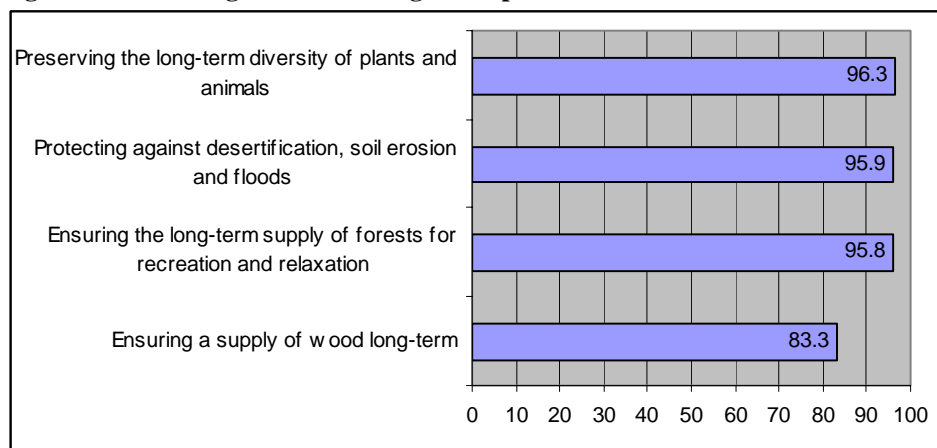
¹¹ Statistical significance determined by t-tests; both less than .05.

¹² Statistically significant difference using t-test; sig=.042.

¹³ Statistically significant difference using t-test; sig=.028.

¹⁴ Statistical significance determined by t-tests; both sig=.000.

¹⁵ Statistical significance determined by t-tests; both less than .05.

Figure A: Percentage understanding the importance of forests

Environmental issues

Nearly all respondents (98 percent) agreed that “each person in Armenia must take personal responsibility for the environment” (see Tables 14a and 15), with about 60 percent indicating that they “strongly agree” with the statement.

About 88 percent of the respondents reported that they are worried that their children will live in a worse environment than they do now (see Table 14c). Urban and Yerevan residents tend to agree with this statement more than rural residents.¹⁶

Seventy-one percent of the respondents disagreed with a statement that “the so-called ecological crisis facing Armenia has been exaggerated,” with 24 percent indicating that they strongly disagree with this statement (see Table 14g). Yerevan residents are more likely to disagree with the statement than are marz residents and residents of villages with gas are more likely to disagree than are residents of villages without gas.¹⁷

Nearly 100 percent of the respondents said that “forests should be saved for the benefit of the environment and people” (see Table 14h).

Deforestation problem

Nearly all respondents (95 percent) agreed that “deforestation is a significant problem in Armenia,” with about 55 percent saying that they strongly agree with the statement (see Table 14b).

About 86 percent of the respondents disagreed with the statement “we still have plenty of forests in Armenia and deforestation is not a significant problem,” with 34 percent indicating that

¹⁶ Statistical significance determined by t-tests; both less than .05.

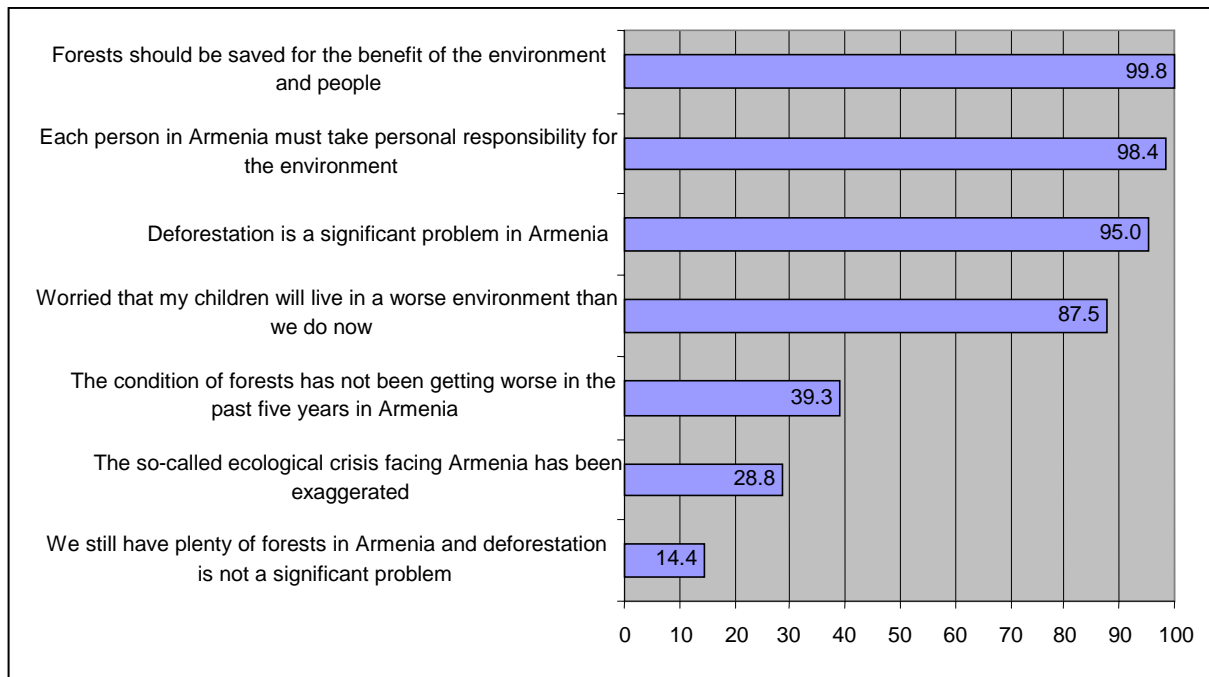
¹⁷ Statistical significance determined by t-tests; both less than .05.

they strongly disagree with this statement (see Table 14e). Urban and Yerevan residents tend to disagree with the statement more than rural residents.¹⁸

Almost 61 percent of the respondents disagreed that “the condition of forests has not been getting worse in the past five years in Armenia,” with 20 percent of the respondents strongly disagreeing (see Table 14j). Men are more likely to disagree with the statement than are women, and Yerevan residents tend to disagree somewhat more than marz residents.¹⁹

Figure B provides a summary of the percentages of respondents agreeing with each of the statements about environmental issues, including deforestation problem.

Figure B: Percentage agreeing with statements about environmental issues in Armenia



Using forests for firewood

Ninety-four percent of the respondents said that the illegal use of the forest for firewood would decrease if poverty decreased. Nearly 54 percent strongly agreed with this statement (see Table 14d).

Ninety-seven percent of the respondents reported that “it is fine to harvest wood from forests as long as it is properly managed in a sustainable way.” Just under half of the respondents strongly agreed with this statement (see Table 14i).

¹⁸ Statistical significance determined by t-tests; both less than .05.

¹⁹ Statistical significance determined by t-tests; both less than .05.

Illegal cutting of forest

Sixty-seven percent of the respondents would notify authorities if illegal cutting of forest was observed and 24 percent would not notify (see Table 8). More rural residents (71 percent) than urban residents (65 percent) said that they would report observations of illegal cutting. Similarly, more marz residents (69 percent) than Yerevan residents (64 percent) would undertake this step. There are marz differences with residents of marzes with larger forest areas being less willing to report than residents of marzes with smaller forest areas. For instance, 38 percent of the respondents of Tavush marz said they would not notify authorities, followed by respondents in Lori and Kotayk marzes with about 33 percent and 31 percent, respectively. Interestingly, far more residents of non-forest adjacent villages (83 percent) than residents of forest adjacent villages (58 percent) indicated that they would report illegal cutting.

When the 24 percent of respondents (n=245) who said that they would not report were asked in an open-ended question about the reason behind this decision nearly 17 percent said because it is not their business. About 14 percent do not believe that reporting would help. Twelve percent understand why people cut illegally and explain that it is out of necessity. Eleven percent of the respondents do not know where to make a report. See Table 8a for a list of all responses.

Problems that contribute to deforestation in Armenia

Respondents were read a list of six problems that can contribute to deforestation and were asked to indicate if each is a problem that can cause deforestation in Armenia on a scale of one to ten, where one is “not problem at all” and ten is “a very important problem” (see Tables 16a through 16f and Table 17).

Figure C: Ratings, on a scale of 1 to 10 of the problems leading to deforestation in Armenia

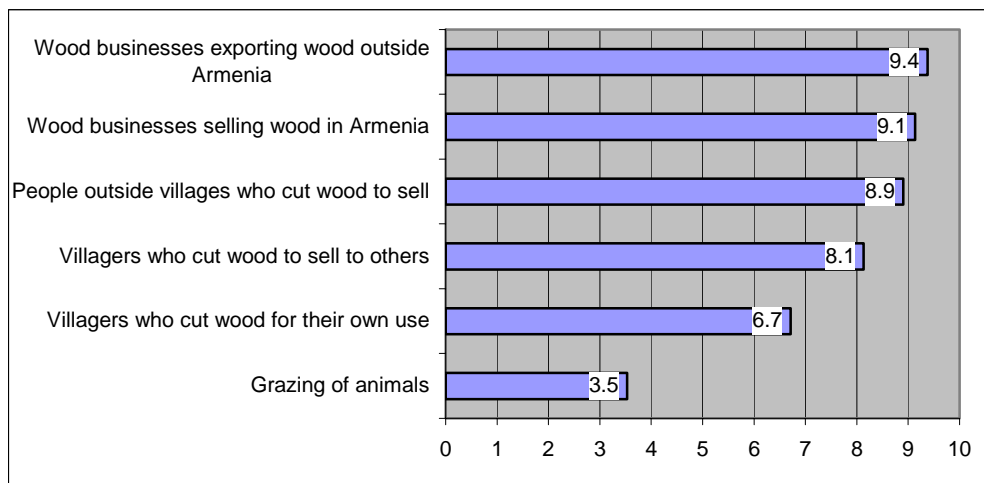


Figure C displays the results for mean responses in descending order for six ratings. Respondents rated grazing of animals as the least problematic (3.5 on the scale of one to ten).

The highest ratings for the problems contributing to deforestation in Armenia were given by respondents to wood businesses that export wood outside Armenia (mean = 9.4), wood businesses that sell wood in Armenia (mean = 9.1), and people outside villages who cut wood to sell (mean = 8.9), followed by villagers who cut wood to sell to others (mean = 8.1), and villagers who cut wood for their own use (mean = 6.7).

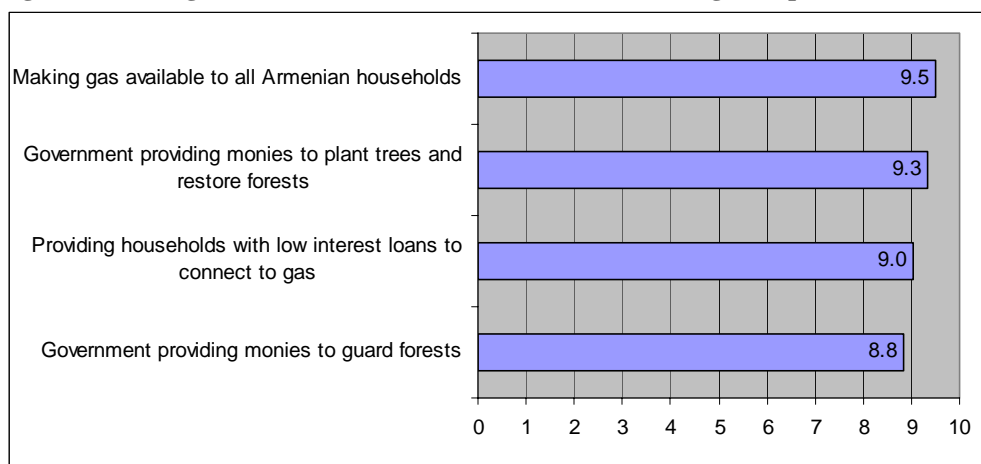
Urban residents gave higher ratings than rural residents to the problems of villagers and non-villagers who cut wood to sell. Yerevan residents rated higher than marz residents four problems: “grazing of animals,” “villagers who cut wood to sell to others,” “people outside villages who cut wood to sell,” and “wood businesses that export wood outside Armenia.” Residents of non-forest adjacent villages were more likely to give higher ratings than were residents of forest adjacent villages to the problems of villagers and people outside villages who cut wood to sell and wood businesses that sell wood in Armenia or export wood outside Armenia. Residents of villages with gas gave higher rating than residents of villages without gas to the problem of villagers who cut wood for their own use.

Solutions that might help to save forests in Armenia

In another series of separate questions, respondents were asked to rate four solutions that might help to save forests in Armenia on a scale of 1 (not a solution) to 10 (perfect solution).

The highest rating was given by respondents to making gas available to all Armenian households (mean = 9.5), followed by government providing monies to plant trees and restore forests (mean = 9.3), providing households with low interest loans to connect to gas (mean = 9.0), and government providing monies to guard forests (mean = 8.8). (See Tables 20a through 20d, Table 21 and Figure D.)

Figure D: Ratings, on a scale of 1 to 10 of the solutions that might help to save forests in Armenia



Rural residents gave higher ratings than urban residents to all the solutions except the one related to the government providing monies to plant trees and restore forests. Marz residents were more likely than Yerevan residents to give higher ratings to gas-related solutions: providing with gas and providing with low interest loans to connect to gas. Making gas available to all

Armenian households was rated higher by residents of villages without gas than by residents of villages with gas.

Government involvement

The overwhelming majority of respondents (99 percent) said that “the Armenian Government should change its approach and make the protection of forests a priority problem to solve,” with 53 strongly agreeing (see Table 14k).

Nearly all respondents (95 percent) agreed with the statement “the Armenian Government should not allow the export of wood,” with about 47 percent indicating that they strongly agree with this statement (see Table 14f).

Levels of knowledge about deforestation

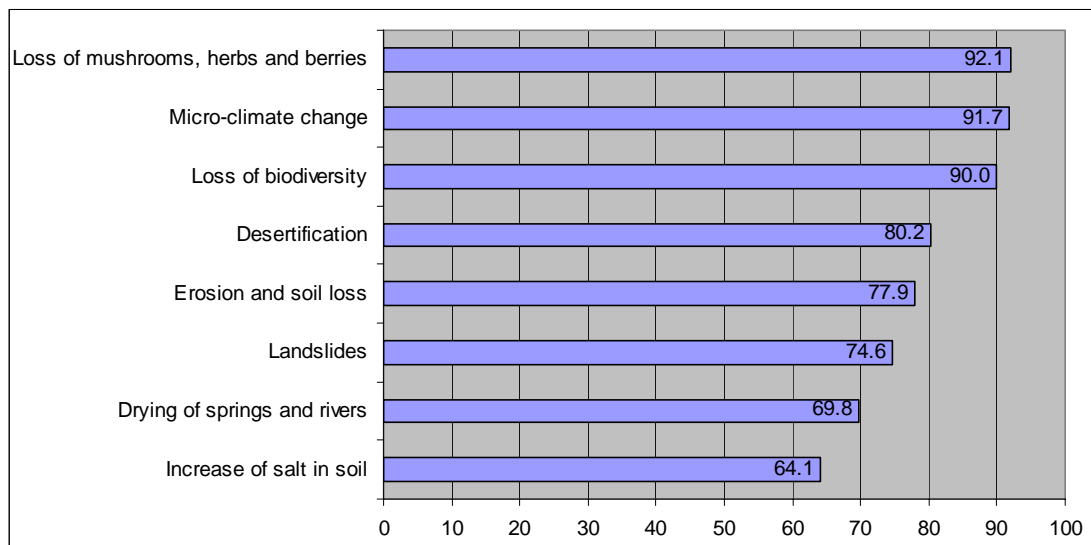
Respondents were asked several questions to test levels of knowledge about deforestation.

In an open-ended question respondents were asked about the major impact of the loss of forests on themselves and their families. Responses were recoded into several categories and can be found in Table 7. About 60 percent of the respondents indicated the shortage of oxygen as the major impact, while 11 percent pointed to the lack of places for recreation and relaxation. Nearly seven percent of the respondents could not name an impact, and 13 respondents said that the loss of forests has no impact.

Respondents were read a list of eight items and were asked if each could be a result when the amount of forest land is decreased. “Don’t know” was kept separate from “don’t understand” in order to test knowledge (see Table 9). Ninety-two percent of the respondents said that the loss of non-wood products such as mushrooms, herbs and berries could be a result of decreased forests. Another 92 percent indicated micro-climate change, 90 percent the loss of biodiversity, 80 percent desertification, 78 percent erosion and soil loss, 75 percent landslides, 70 percent drying of springs and rivers, and 64 percent increased salt levels in soil. (See Figure E.) Nearly 20 percent of the respondents could not answer the question about the increase of salt in soil.

Respondents were read the same list of eight results a second time and were asked to indicate the major negative effect of deforestation. The top four negative effects indicated by respondents were micro-climate change (30 percent), desertification (27 percent), drying of springs and rivers (16 percent), and loss of biodiversity (11 percent) (see Table 10). Twice as many residents of forest adjacent villages (29 percent) than residents of non-forest adjacent villages (14 percent) indicated drying of springs and rivers as the major negative effect of deforestation, while more residents of non-forest adjacent villages (29 percent) than residents of forest adjacent villages (20 percent) named desertification and micro-climate change.

Figure E: “Yes” answers to the question, “can you please tell me if you think that, yes or no, the item can be a result when the amount of forest land is decreased?”



Use of forests

Respondents were read a list of purposes of forest use and were asked for what reasons they or their families go to forests in Armenia. The majority of respondents (72 percent) use forests for relaxation and recreation. Forty-nine percent go to forests for gathering non-wood products like herbs. About 14 percent of the respondents gather wood for their own home fuel use, while not surprisingly only one percent of the respondents reported going to forests for cutting wood to sell to others (see Table 18).

Seventy-nine percent of Yerevan residents and about 69 percent of residents outside Yerevan use forests for relaxation and recreation. Similarly, 74 percent of the residents of forest adjacent villages and nearly 65 percent of the residents of non-forest adjacent villages go to forests for these purposes.

More respondents in rural areas (59 percent) than urban areas (44 percent) and more respondents in the marzes (55 percent) than in Yerevan (39 percent) go to forests for gathering non-wood products like herbs. Far more residents of forest adjacent villages (75 percent) than residents of non-forest adjacent villages (46 percent) gather non-wood products like herbs in the forests. Similarly, more residents of villages without gas (68 percent) than residents of villages with gas (56 percent) indicated this reason for using forests.

Thirty percent of the rural residents and only five percent of the urban residents gather wood for own home fuel use in the forests. Again, far more marz residents (20 percent) than Yerevan residents (three percent) go to forests for gathering wood for own home fuel use. When compared by forest adjacent and non-forest adjacent villages, far more residents of forest adjacent villages (58 percent) than residents of non-forest adjacent villages (seven percent) reported this purpose of forest use. There is also a difference in the responses based on gas

availability in the village: about 37 percent of the residents of villages without gas and 27 percent of the residents of villages with gas reported that they gather fuel wood in the forests.

All of the rural respondents who said that they go to forests for cutting wood for sale to others (n=5) are residents of forest adjacent villages.

As a check, respondents were read the same list of four purposes a second time and were asked about other people in the community using forests for the same purposes. Seventy-three percent of the respondents reported that others in the community go to forests for relaxation and recreation, while about 55 percent said that others gather non-wood products like herbs in the forests. Nearly 26 percent of the respondents know other people in the community who go to forests for gathering wood for own home fuel use. Only eight percent of the respondents know others who cut wood for sale in the forests (see Table 19).

In addition, the rural residents were asked about grazing animals on forest land. Thirty-one percent of the 356 interviewed rural residents reported that they graze animals on forest land (see Table 28). Forty-eight percent of the rural residents know other people in the same village who graze animals on forest land (see Table 29).

About 47 percent of the residents of forest adjacent villages and only 18 percent of the residents of non-forest adjacent villages reported that they graze animals on forest land. Again, far more residents of forest adjacent villages (73 percent) than residents of non-forest adjacent villages (27 percent) said that they know other people in the same village grazing animals on forest land.

Use of wood and non-wood fuels

Nearly 62 percent of the respondents use natural gas for heating and/or cooking at home. Other methods include electricity (39 percent), wood (23 percent), atar (or manure, 22 percent), and propane gas (17 percent). (See Table 22.)

Using wood for fuel

In a more concrete question about the use of wood at home as fuel for cooking in the house or for heating the house about 30 percent of the respondents (n=299) reported using wood for these purposes (see Table 23).

Far more rural residents (58 percent) than urban residents (14 percent) and far more marz residents (43 percent) than Yerevan residents (six percent) use wood at home for fuel for cooking in the house or for heating the house. When compared by marzes, far more residents of marzes with larger forest areas reported using wood than residents of marzes with smaller forest areas. For instance, the overwhelming majority of respondents of Tavush marz (93 percent) use wood for fuel, followed by respondents of Syunik (77 percent) and Lori marzes (51 percent). As would be expected, far more residents of forest adjacent villages (82 percent) than residents of non-forest adjacent villages (38 percent) and far more residents of villages without gas (81

percent) than residents of villages with gas (48 percent) use wood for cooking or heating purposes.

Respondents who ever use wood at home for fuel were asked in a question with multiple responses permitted how they obtain it. Of the 299 respondents who ever use wood at home, 58 percent reported that they gather it from fallen trees and branches, about 41 percent buy wood from trees cut in outside areas, and about six percent of the respondents themselves or their family members cut trees. In addition, of the 207 rural respondents who ever use wood at home, nearly 36 percent buy it from others in the village (see Table 24a).

More rural residents (65 percent) than urban residents (42 percent) and more marz residents (58 percent) than Yerevan residents (55 percent) gather wood from fallen trees and branches. Far more residents of forest adjacent villages (73 percent) than residents of non-forest adjacent villages (51 percent) use fallen trees and branches as wood for fuel.

Twice as many urban residents (64 percent) than rural residents (30 percent) and more Yerevan residents (65 percent) than residents outside Yerevan (39 percent) buy wood from trees cut in outside areas. Similarly, more residents of non-forest adjacent villages (38 percent) than residents of forest adjacent villages (25 percent) obtain wood in this way.

All 17 respondents who reported using wood cut by themselves or their family members are marz residents, and all of them except one are rural residents. An equal percentage of the residents of forest adjacent and non-forest adjacent villages (eight percent) mentioned cutting trees.

Far more residents of forest adjacent villages (49 percent) than residents of non-forest adjacent villages (12 percent) buy wood from others in the village.

Table 24b provides a summary of means for percentages of ways of getting wood. On average, nearly 82 percent of the wood was bought from trees cut in outside areas, 71 percent was gathered from fallen trees and branches, 61 percent bought from others in the village, and 53 percent cut by the respondents or their family members.

On average, 68 percent of heating of the respondents' houses and about 22 percent of cooking in their houses come from burning wood. The interviewed households use 5.4 cubic meters of wood for just heating and nearly 1.3 cubic meters of wood for cooking per year on average. In sum, these households use about 6.7 cubic meters of wood per year.

Rural residents use more wood than urban residents per year for heating and cooking. On average, annually rural residents use 6.0 cubic meters of wood for heating, while urban residents use 4.1 cubic meters. In addition, rural residents use 1.5 cubic meters for cooking, while urban residents 0.8 cubic meters annually.

Marz residents use more wood than Yerevan residents per year for heating and cooking, with marz residents using on average 5.6 cubic meters of wood per year for heating compared to

2.5 cubic meters for Yerevan residents. Similarly, marz residents use 1.3 cubic meters of wood per year for cooking and Yerevan residents only 0.7 cubic meters.

As would be expected, residents of forest adjacent villages use more wood per year than residents of non-forest adjacent villages for heating and cooking. On average, 7.0 and 4.2 cubic meters of wood are used per year for heating by residents of forest adjacent and non-forest adjacent villages, respectively. Similarly, 1.7 and 1.1 cubic meters of wood are used per year for cooking by residents of forest adjacent and non-forest adjacent villages, respectively. In addition, on average about 78 percent of heating of the houses in forest adjacent villages come from burning wood, while in non-forest adjacent villages 42 percent come from burning wood.

In villages without gas about 77 percent of heating and 37 percent of cooking come from burning wood, while the rates in villages with gas are about 57 percent for heating and nearly 13 percent for cooking. Residents of villages without gas use more wood than residents of villages with gas per year for cooking and for heating -- residents of villages without gas use 2.0 cubic meters of wood per year for cooking, residents of villages with gas use only 1.0 cubic meter, on average. Similarly, residents of villages without gas use 6.4 cubic meters of wood per year for heating, whereas residents of villages with gas use 5.7 cubic meters.

Respondents were asked how much they spent on wood for fuel during the previous month.²⁰ Seventeen percent of the respondents (n=173) said that they had bought wood the previous month, while 11 percent indicated that they got wood for free. The amount spent by these 173 households the previous month ranged from 800 to 30,000 drams with the average amount by household at 8,641 drams (see Table 36).

Interestingly, households of villages with gas spent more on wood for fuel the previous month than households of villages without gas, on average, 11,455 drams versus 5,855 drams. This finding can be explained by the fact that nearly one-fourth of the households of villages with gas (n=60) do not use gas even though it is available in the village. No significant differences were found for the amount spent on wood between urban and rural residents, Yerevan and the ten marzes, or forest adjacent and non-forest adjacent villages.

Using non-wood fuels

Several questions were asked of respondents in order to determine what other fuels are being used and why some households use wood instead of gas when gas is available.

There was no gas available in four of ten villages in which interviews were conducted. In the six villages with gas 245 households participated in the survey (see Table 4). Respondents of all cities, including Yerevan, and villages with gas (n=895) were asked if the building where they live is connected to gas. Of these 895 respondents nearly 76 percent (n=676) reported that the building has gas (see Table 25).

However, not all these 676 respondents reported using gas even though it is available in the building. Eight percent of these respondents (n=55) do not have gas at home, although the

²⁰ November 2006

building has it, and all of them are urban residents. Respondents using gas (n=621) were asked how much the household spent on gas the previous month and the reported range of the gas expenditures was 450 to 60,000 drams with the average amount by household at 7,786 drams (see Table 35).

The reported amount paid for gas expenditures the previous month by marz households was higher than the gas bill of Yerevan households. It was on average 9,108 drams for marz households versus 5,613 drams for Yerevan households. Similarly, households in non-forest adjacent villages paid more for gas than households in forest adjacent villages: 9,373 drams versus 7,154 drams, respectively.

The fifty-five urban respondents not using gas were asked in an open-ended question why not. Sixty-nine percent of these 55 respondents said that they do not have gas at home because they lack finances necessary to bring gas to the home. (See Table 26.)

These 55 urban respondents living in the buildings connected to gas but not having it at home were also asked whether or not they would take a low interest loan to bring gas to the home. About 62 percent of these respondents would take such a loan (see Table 27).

This same question about taking a low interest loan to bring gas to the home was also asked of the rural respondents who are not using gas even though it is available in the village (n=60). Fifty-eight percent of these 60 rural respondents reported that they would take such a loan, while 23 percent could not answer this question (see Table 27).

The urban (n=12) and rural (n=11) residents who would not take a low interest loan to bring gas to the home were asked in an open-ended question why they would not take such a loan. Eighty-three percent of these 12 urban residents and about ninety-one percent of these 11 rural residents indicated that they would not take such a loan because they are afraid of not being able to repay it. Nearly 17 percent of the urban residents and nine percent of the rural residents said that they do not want gas at home (see Table 27a).

Respondents were also asked for the amount spent on electricity the previous month, and the reported amount ranged from 400 to 65,000 drams with the average amount by household at 4,940 drams (see Table 34). Urban residents and Yerevan residents tend to use electricity more than rural residents and marz residents. The reported mean amounts paid for electricity the previous month by urban and Yerevan households were 5,741 and 6,509 drams respectively versus 3,477 and 4,099 drams paid respectively by rural and marz households. No significant differences were found for forest adjacent versus non-forest adjacent villages, or villages with gas versus villages without gas.

An open-ended question with multiple responses permitted was asked of all rural residents in order to determine opinions on what needs to be done so that people in villages stop using wood as fuel. Table 30 provides responses to this question that were recoded into several categories. Nearly 66 percent of the rural residents indicated that providing gas could keep people in the village from using wood as fuel, while 25 percent explained that cheaper gas would be a solution, and 16 percent said that improving living conditions could help to stop the use of wood as fuel.

Many more residents of villages without gas (96 percent) than residents of villages with gas (52 percent) indicated providing with gas as a solution, while more residents of villages with gas (35 percent) than residents of villages without gas (four percent) suggested making gas cost cheaper. More residents of non-forest adjacent villages (23 percent) than residents of forest adjacent villages (nine percent) mentioned improving living conditions as a solution.

Summary of Major Findings

This section summarizes the major findings of the report.

Attitudes toward deforestation and protection of forests

- Nine out of ten Armenians are at least “somewhat interested” in the protection of forests in Armenia.
- Only four out of ten Armenians are at least “somewhat satisfied” with the protection of forests in Armenia, with residents of forest adjacent villages being more satisfied than residents of non-forest adjacent villages and urban and Yerevan residents more dissatisfied than rural and marz residents.
- Nearly all Armenians believe that forests are important for preserving the long-term diversity of plants and animals, protecting against desertification, soil erosion and floods, and ensuring the long-term supply of places for recreation and relaxation. Eight in ten indicated that forests are important for ensuring a supply of wood long-term.
- Nearly all Armenians believe that “each person in Armenia must take personal responsibility for the environment,” and nearly 100 percent of Armenians believe that “forests should be saved for the benefit of the environment and people.”
- Nine out of ten Armenians are worried that their children will live in a worse environment than they do now.
- Seven out of ten Armenians disagree that “the so-called ecological crisis facing Armenia has been exaggerated.”
- Nearly all Armenians agree that “deforestation is a significant problem in Armenia,” and nine in ten Armenians disagree that “we still have plenty of forests in Armenia and deforestation is not a significant problem.”
- About two-thirds of Armenians believe that the condition of forests has been getting worse in the past five years in Armenia.
- Nearly all Armenians agree that “it is fine to harvest wood from forests as long as it is properly managed in a sustainable way.”
- Nine in ten Armenians believe that “if poverty decreased, then the illegal use of the forest for firewood would decrease.”
- Seven in ten Armenians would report if they observed illegal cutting of forest, with more residents of non-forest adjacent villages than residents of forest adjacent villages being willing to make such a report.

- The major causes of deforestation in Armenia cited by respondents are businesses that export wood outside Armenia, businesses that sell wood in Armenia, and people outside villages who cut wood to sell.
- Armenians gave a score of 9.5 (on a scale of one to ten where ten is “perfect solution”) to making gas available to all Armenian households.
- Nearly all Armenians agree that “the Armenian Government should change its approach and make the protection of forests a priority problem to solve,” and that “the Armenian Government should not allow the export of wood.”

Levels of knowledge about deforestation

- Six in ten Armenians indicated the shortage of oxygen as the major impact of the loss of forests on themselves and their families.
- Respondents demonstrated little difficulty in understanding the negative results when the amount of forest land is decreased.
- The top four negative effects of deforestation indicated by Armenians are micro-climate change, desertification, drying of springs and rivers, and loss of biodiversity.

Use of forests

- Seven in ten Armenians use forests for relaxation and recreation, while five in ten go to forests for gathering non-wood products like herbs.
- Far more rural and marz residents than urban and Yerevan residents gather wood for own home fuel use in the forests. Similarly, far more residents of forest adjacent villages than residents of non-forest adjacent villages go to forests for gathering wood for own home fuel use.
- Three in ten Armenians living in rural areas graze animals on forest land, while five in ten know other people in the same village who graze animals on forest land.

Using wood for fuel

- Three in ten Armenians use wood at home for fuel for cooking in the house or for heating the house.
- Many more rural and marz residents than urban and Yerevan residents use wood at home for fuel for cooking or heating. Most Armenians using wood are living in marzes with large forest areas.
- Eight in ten Armenians living in forest adjacent villages and only four in ten Armenians living in non-forest adjacent villages use wood for cooking or heating purposes. Similarly,

eight in ten Armenians living in villages without gas and five in ten Armenians living in villages with gas use wood for these purposes.

- About 60 percent of Armenians using wood at home gather it from fallen trees and branches, with more rural and marz residents than urban and Yerevan residents using fallen trees and branches as wood for fuel.
- Nearly 40 percent of Armenians using wood at home buy it from trees cut in outside areas, with more urban and Yerevan residents than rural and marz residents purchasing it.
- Four in ten Armenians living in rural areas and using wood at home buy it from others in the village.
- On average, 68 percent of heating of the houses and 22 percent of cooking come from burning wood. Annually Armenians use 5.4 cubic meters of wood for heating and 1.3 cubic meters of wood for cooking on average, with rural and marz residents using more wood than urban and Yerevan residents.

Using non-wood fuels

- About two-thirds of Armenians use natural gas for heating and/or cooking at home, four in ten Armenians use electricity, two in ten use manure, and about one in five use propane gas.
- Although about 76 percent of the urban residents and residents of villages with gas stated that the building where they are living has gas, not all of them have it at home, mainly because of lack of finances necessary to bring gas to the home.
- When asked about taking a low interest loan for bringing gas to the home, nearly six in ten Armenians who do not use gas agree to take such a loan. Most Armenians who would not take such a loan explain that they are afraid of not being able to repay this loan.

Table 1: Number of interviews conducted by Yerevan and ten marzes compared to ROA census data			
	Frequency	Percent	ROA 2001 Census data
Yerevan	351	34.9	34.3
Aragatsotn	43	4.3	4.3
Ararat	85	8.4	8.5
Armavir	86	8.5	8.6
Gegharkunik	73	7.3	7.4
Lori	89	8.8	8.9
Kotayk	85	8.4	8.5
Shirak	88	8.7	8.8
Syunik	47	4.7	4.8
Tavush	42	4.2	4.2
Vayots Dzor	17	1.7	1.7
Total	1006	100.0	100.0

Table 2: Number of interviews conducted by urban and rural populations compared to ROA census data			
	Frequency	Percent	ROA 2001 Census data
Urban	650	64.6	64.3
Rural	356	35.4	35.7
Total	1006	100.0	100.0

Table 3: Number of interviews conducted in forest adjacent villages		
	Frequency	Percent
forest adjacent	163	45.8
non-forest adjacent	193	54.2
Total	356	100.0

Table 4: Number of interviews conducted in villages with gas		
	Frequency	Percent
gas to village	245	68.8
no gas to village	111	31.2
Total	356	100.0

Table 5: Number of interviews conducted by Yerevan and marzes compared to ROA census data

	Frequency	Percent	ROA 2001 Census data
Yerevan	351	34.9	34.3
Marzes	655	65.1	65.7
Total	1006	100.0	100.0

Table 6: Level of interest in protection of forests in Armenia

	Frequency	Percent	Valid Percent**	Cumulative Percent
very interested	535	53.2	53.7	53.7
somewhat interested	343	34.1	34.4	88.1
somewhat uninterested	29	2.9	2.9	91.0
very uninterested	90	8.9	9.0	100.0
don't know/can't say	9	0.9	100.0	
Total	1006	100.0		

Mode=1, Mean=1.67, Median=1.00 (1=very interested and 4=very uninterested; don't know/can't say excluded)

**Valid percent is percentage without don't know/can't say

Table 7: What is the ONE major impact of the loss of forests on respondents and their families

(open-ended question; in descending order)

	Frequency	Percent
not clean air/shortage of oxygen	603	59.9
lack of places for recreation and relaxation	111	11.0
health problems	66	6.6
ecological crisis	39	3.9
loss of fuel wood	20	2.0
harm to nature	16	1.6
climate change	14	1.4
loss of biodiversity	12	1.2
water shortage	8	0.8
psychological impact	7	0.7
desertification	7	0.7
threat of extinction of human beings	6	0.6
drying of springs and rivers	5	0.5
unstable economic situation in the country	4	0.4
other	9	0.9
no impact	13	1.3
don't know/can't say	66	6.6
Total	1006	100.0

	Frequency	Percent
yes	676	67.2
no	245	24.4
don't know/can't say	85	8.4
Total	1006	100.0

	Frequency	Percent
It is not my business	41	16.7
Don't think it will help	34	13.9
Understand people who cut/they cut out of necessity	30	12.2
Don't know where to make a report	27	11.0
Afraid of consequences	15	6.1
Don't want to harm anyone	12	4.9
Denouncing is not in my character	11	4.5
Will settle the matter by myself	10	4.1
Don't want problems	8	3.3
Denouncing is not a good behavior	6	2.4
We also cut	5	2.0
Lack of interest	5	2.0
People who cut do it legally	4	1.6
State authorities themselves cut trees	4	1.6
Denouncing is not characteristic for our nation	3	1.2
Other	5	2.0
Can't answer	25	10.2
Total	245	100.0

Table 9: Results when forest land is decreased*(in descending order)*

		Yes	No	Don't know/ Can't say	Don't understand	Total
loss of non-wood products such as mushrooms, herbs and berries	Count	927	48	29	2	1006
	percentage	92.1	4.8	2.9	0.2	100.0
micro-climate change	Count	922	37	35	12	1006
	percentage	91.7	3.7	3.5	1.2	100.0
loss of biodiversity	Count	905	36	40	25	1006
	percentage	90.0	3.6	4.0	2.5	100.0
desertification	Count	807	143	52	4	1006
	percentage	80.2	14.2	5.2	0.4	100.0
erosion and soil loss	Count	784	109	78	35	1006
	percentage	77.9	10.8	7.8	3.5	100.0
landslides	Count	750	107	91	58	1006
	percentage	74.6	10.6	9.0	5.8	100.0
drying of springs and rivers	Count	702	201	89	14	1006
	percentage	69.8	20.0	8.8	1.4	100.0
increase of salt in soil	Count	645	112	199	50	1006
	percentage	64.1	11.1	19.8	5.0	100.0

Table 10: What is the ONE major negative effect of deforestation*(in descending order)*

	Frequency	Percent	Cumulative Percent
micro-climate change	306	30.4	30.4
desertification	269	26.7	57.2
drying of springs and rivers	156	15.5	72.7
loss of biodiversity	108	10.7	83.4
landslides	61	6.1	89.5
loss of non-wood products such as mushrooms, herbs and berries	37	3.7	93.1
erosion and soil loss	35	3.5	96.6
increase of salt in soil	17	1.7	98.3
none	2	0.2	98.5
don't know/can't say	15	1.5	100.0
Total	1006	100.0	

Table 11a: How important for Armenian society in general is ensuring a supply of wood long-term

	Frequency	Percent	Valid Percent	Cumulative Percent
very important	420	41.7	43.0	43.0
somewhat important	393	39.1	40.3	83.3
somewhat unimportant	78	7.8	8.0	91.3
not important at all	85	8.4	8.7	100.0
don't know/can't say	30	3.0	100.0	
Total	1006	100.0		

Mean=1.82, Mode=1, Median=2.00 (1=very important and 4=not important at all; don't know/can't say excluded)

Table 11b: How important for Armenian society in general is preserving the long-term diversity of plants and animals

	Frequency	Percent	Valid Percent	Cumulative Percent
very important	772	76.7	77.7	77.7
somewhat important	185	18.4	18.6	96.3
somewhat unimportant	32	3.2	3.2	99.5
not important at all	5	0.5	0.5	100.0
don't know/can't say	12	1.2	100.0	
Total	1006	100.0		

Mean=1.27, Mode=1, Median=1.00 (1=very important and 4=not important at all; don't know/can't say excluded)

Table 11c: How important for Armenian society in general is ensuring the long-term supply of forests for recreation and relaxation

	Frequency	Percent	Valid Percent	Cumulative Percent
very important	715	71.1	71.5	71.5
somewhat important	243	24.2	24.3	95.8
somewhat unimportant	32	3.2	3.2	99.0
not important at all	10	1.0	1.0	100.0
don't know/can't say	6	0.6	100.0	
Total	1006	100.0		

Mean=1.34, Mode=1, Median=1.00 (1=very important and 4=not important at all; don't know/can't say excluded)

Table 11d: How important for Armenian society in general is protecting society against negative effects such as desertification, soil erosion and floods

	Frequency	Percent	Valid Percent	Cumulative Percent
very important	748	74.4	76.5	76.5
somewhat important	190	18.9	19.4	95.9
somewhat unimportant	22	2.2	2.2	98.2
not important at all	18	1.8	1.8	100.0
don't know/can't say	28	2.8	100.0	
Total	1006	100.0		

Mean=1.29, Mode=1, Median=1.00 (1=very important and 4=not important at all; don't know/can't say excluded)

Table 12: Means for attitude measures in tables 11a through 11d

(in ascending order)

	Mean	Mode	Median
Preserving the long-term diversity of plants and animals	1.27	1	1.00
Protecting society against negative effects like desertification, soil erosion and floods	1.29	1	1.00
Ensuring the long-term supply of forests for recreation and relaxation	1.34	1	1.00
Ensuring a supply of wood long-term	1.82	1	2.00

(1=very important and 4=not important at all; don't know/can't say excluded)

Table 13: Level of satisfaction with protection of forests in Armenia

	Frequency	Percent	Valid Percent	Cumulative Percent
very satisfied	67	6.7	7.1	7.1
somewhat satisfied	336	33.4	35.6	42.6
somewhat unsatisfied	131	13.0	13.9	56.5
very unsatisfied	411	40.9	43.5	100.0
don't know/can't say	61	6.1	100.0	
Total	1006	100.0		

Mean=2.94, Mode=4, Median=3.00 (1=very satisfied and 4=very unsatisfied; don't know/can't say excluded)

Table 14a: Each person in Armenia must take personal responsibility for the environment

	Frequency	Percent	Valid Percent	Cumulative Percent
strongly agree	595	59.1	59.7	59.7
agree	386	38.4	38.7	98.4
disagree	16	1.6	1.6	100.0
strongly disagree	0	0.0	0.0	
don't know/can't say	9	0.9	100.0	
Total	1006	100.0		

Mean=1.42, Mode=1, Median=1.00 (1=strongly agree and 4=strongly disagree; don't know/can't say excluded)

Table 14b: Deforestation is a significant problem in Armenia

	Frequency	Percent	Valid Percent	Cumulative Percent
strongly agree	540	53.7	54.8	54.8
agree	396	39.4	40.2	95.0
disagree	48	4.8	4.9	99.9
strongly disagree	1	0.1	0.1	100.0
don't know/can't say	21	2.1	100.0	
Total	1006	100.0		

Mean=1.50, Mode=1, Median=1.00 (1=strongly agree and 4=strongly disagree; don't know/can't say excluded)

Table 14c: Worried that my children will live in a worse environment than we do now

	Frequency	Percent	Valid Percent	Cumulative Percent
strongly agree	416	41.4	44.3	44.3
agree	405	40.3	43.2	87.5
disagree	113	11.2	12.0	99.6
strongly disagree	4	0.4	0.4	100.0
don't know/can't say	68	6.8	100.0	
Total	1006	100.0		

Mean=1.69, Mode=1, Median=2.00 (1=strongly agree and 4=strongly disagree; don't know/can't say excluded)

Table 14d: If poverty decreased, then the illegal use of the forest for firewood would decrease

	Frequency	Percent	Valid Percent	Cumulative Percent
strongly agree	529	52.6	53.8	53.8
agree	396	39.4	40.2	94.0
disagree	54	5.4	5.5	99.5
strongly disagree	5	0.5	0.5	100.0
don't know/can't say	22	2.2	100.0	
Total	1006	100.0		

Mean=1.53, Mode=1, Median=1.00 (1=strongly agree and 4=strongly disagree; don't know/can't say excluded)

Table 14e: We still have plenty of forests in Armenia and deforestation is not a significant problem

	Frequency	Percent	Valid Percent	Cumulative Percent
strongly agree	21	2.1	2.2	2.2
agree	118	11.7	12.2	14.4
disagree	499	49.6	51.5	65.9
strongly disagree	330	32.8	34.1	100.0
don't know/can't say	38	3.8	100.0	
Total	1006	100.0		

Mean=3.18, Mode=3, Median=3.00 (1=strongly agree and 4=strongly disagree; don't know/can't say excluded)

Table 14f: The Armenian Government should not allow the export of wood

	Frequency	Percent	Valid Percent	Cumulative Percent
strongly agree	449	44.6	46.9	46.9
agree	462	45.9	48.2	95.1
disagree	40	4.0	4.2	99.3
strongly disagree	7	0.7	0.7	100.0
don't know/can't say	48	4.8	100.0	
Total	1006	100.0		

Mean=1.59, Mode=2, Median=2.00 (1=strongly agree and 4=strongly disagree; don't know/can't say excluded)

Table 14g: The so-called ecological crisis facing Armenia has been exaggerated

	Frequency	Percent	Valid Percent	Cumulative Percent
strongly agree	24	2.4	2.8	2.8
agree	225	22.4	26.0	28.8
disagree	407	40.5	47.1	75.8
strongly disagree	209	20.8	24.2	100.0
don't know/can't say	141	14.0	100.0	
Total	1006	100.0		

Mean=2.93, Mode=3, Median=3.00 (1=strongly agree and 4=strongly disagree; don't know/can't say excluded)

Table 14h: Forests should be saved for the benefit of the environment and people

	Frequency	Percent	Valid Percent	Cumulative Percent
strongly agree	529	52.6	52.9	52.9
agree	469	46.6	46.9	99.8
disagree	2	0.2	0.2	100.0
strongly disagree	0	0.0	0.0	
don't know/can't say	6	0.6	100.0	
Total	1006	100.0		

Mean=1.47, Mode=1, Median=1.00 (1=strongly agree and 4=strongly disagree; don't know/can't say excluded)

Table 14i: It is fine to harvest wood from forests as long as it is properly managed in a sustainable way

	Frequency	Percent	Valid Percent	Cumulative Percent
strongly agree	427	42.4	42.9	42.9
agree	540	53.7	54.2	97.1
disagree	23	2.3	2.3	99.4
strongly disagree	6	0.6	0.6	100.0
don't know/can't say	10	1.0	100.0	
Total	1006	100.0		

Mean=1.61, Mode=2, Median=2.00 (1=strongly agree and 4=strongly disagree; don't know/can't say excluded)

Table 14j: The condition of forests has not been getting worse in the past five years in Armenia

	Frequency	Percent	Valid Percent	Cumulative Percent
strongly agree	80	8.0	9.6	9.6
agree	248	24.7	29.7	39.3
disagree	337	33.5	40.4	79.6
strongly disagree	170	16.9	20.4	100.0
don't know/can't say	171	17.0	100.0	
Total	1006	100.0		

Mean=2.71, Mode=3, Median=3.00 (1=strongly agree and 4=strongly disagree; don't know/can't say excluded)

Table 14k: The Armenian Government should change its approach and make the protection of forests a priority problem to solve

	Frequency	Percent	Valid Percent	Cumulative Percent
strongly agree	521	51.8	53.3	53.3
agree	449	44.6	45.9	99.2
disagree	7	0.7	0.7	99.9
strongly disagree	1	0.1	0.1	100.0
don't know/can't say	28	2.8	100.0	
Total	1006	100.0		

Mean=1.48, Mode=1, Median=1.00 (1=strongly agree and 4=strongly disagree; don't know/can't say excluded)

Table 15: Means for attitude measures in tables 14a through 14k

(in ascending order)	Mean	Mode	Median
Each person in Armenia must take personal responsibility for the environment.	1.42	1	1.00
Forests should be saved for the benefit of the environment and people.	1.47	1	1.00
The Armenian Government should change its approach and make the protection of forests a priority problem to solve.	1.48	1	1.00
Deforestation is a significant problem in Armenia.	1.50	1	1.00
If poverty decreased, then the illegal use of the forest for firewood would decrease.	1.53	1	1.00
The Armenian Government should not allow the export of wood.	1.59	2	2.00
It is fine to harvest wood from forests as long as it is properly managed in a sustainable way.	1.61	2	2.00
Worried that my children will live in a worse environment than we do now.	1.69	1	2.00

The condition of forests has not been getting worse in the past five years in Armenia.	2.71	3	3.00
The so-called ecological crisis facing Armenia has been exaggerated.	2.93	3	3.00
We still have plenty of forests in Armenia and deforestation is not a significant problem.	3.18	3	3.00
<i>(1=strongly agree and 4=strongly disagree; don't know/can't say excluded)</i>			

Table 16a: Grazing of animals is a problem that contributes to deforestation in Armenia

	Frequency	Percent	Valid Percent	Cumulative Percent
1	382	38.0	39.9	39.9
2	106	10.5	11.1	51.0
3	97	9.6	10.1	61.1
4	59	5.9	6.2	67.3
5	113	11.2	11.8	79.1
6	24	2.4	2.5	81.6
7	33	3.3	3.4	85.1
8	48	4.8	5.0	90.1
9	14	1.4	1.5	91.5
10	81	8.1	8.5	100.0
don't know	44	4.4	100.0	
don't understand	5	0.5		
Total	1006	100.0		

Mean=3.53, Mode=1, Median=2.00 (1=not a problem at all and 10=a very important problem; don't know and don't understand excluded)

Table 16b: Villagers who cut wood for their own use is a problem that contributes to deforestation in Armenia

	Frequency	Percent	Valid Percent	Cumulative Percent
1	70	7.0	7.2	7.2
2	44	4.4	4.5	11.7
3	53	5.3	5.4	17.1
4	39	3.9	4.0	21.1
5	150	14.9	15.4	36.4
6	68	6.8	7.0	43.4
7	76	7.6	7.8	51.2
8	147	14.6	15.0	66.2
9	85	8.4	8.7	74.9
10	245	24.4	25.1	100.0
don't know	29	2.9	100.0	
don't understand	0	0.0		
Total	1006	100.0		

Mean=6.71, Mode=10, Median=7.00 (1=not a problem at all and 10=a very important problem; don't know and don't understand excluded)

Table 16c: Villagers who cut wood to sell to others is a problem that contributes to deforestation in Armenia

	Frequency	Percent	Valid Percent	Cumulative Percent
1	41	4.1	4.2	4.2
2	24	2.4	2.4	6.6
3	21	2.1	2.1	8.8
4	15	1.5	1.5	10.3
5	67	6.7	6.8	17.1
6	33	3.3	3.4	20.5
7	59	5.9	6.0	26.5
8	134	13.3	13.7	40.2
9	125	12.4	12.8	53.0
10	461	45.8	47.0	100.0
don't know	23	2.3	100.0	
don't understand	3	0.3		
Total	1006	100.0		

Mean=8.13, Mode=10, Median=9.00 (1=not a problem at all and 10=a very important problem; don't know and don't understand excluded)

Table 16d: People outside villages who cut wood to sell is a problem that contributes to deforestation in Armenia

	Frequency	Percent	Valid Percent	Cumulative Percent
1	21	2.1	2.1	2.1
2	12	1.2	1.2	3.4
3	7	0.7	0.7	4.1
4	13	1.3	1.3	5.4
5	30	3.0	3.1	8.5
6	17	1.7	1.7	10.2
7	34	3.4	3.5	13.7
8	113	11.2	11.6	25.3
9	115	11.4	11.8	37.0
10	616	61.2	63.0	100.0
don't know	27	2.7	100.0	
don't understand	1	0.1		
Total	1006	100.0		

Mean=8.90, Mode=10, Median=10.00 (1=not a problem at all and 10=a very important problem; don't know and don't understand excluded)

Table 16e: Wood businesses that sell wood in Armenia is a problem that contributes to deforestation in Armenia

	Frequency	Percent	Valid Percent	Cumulative Percent
1	15	1.5	1.6	1.6
2	7	0.7	0.7	2.3
3	7	0.7	0.7	3.0
4	9	0.9	0.9	4.0
5	30	3.0	3.1	7.1
6	12	1.2	1.3	8.4
7	25	2.5	2.6	11.0
8	79	7.9	8.3	19.2
9	105	10.4	11.0	30.2
10	667	66.3	69.8	100.0
don't know	45	4.5	100.0	
don't understand	5	0.5		
Total	1006	100.0		

Mean=9.13, Mode=10, Median=10.00 (1=not a problem at all and 10=a very important problem; don't know and don't understand excluded)

Table 16f: Wood businesses that export wood outside Armenia is a problem that contributes to deforestation in Armenia

	Frequency	Percent	Valid Percent	Cumulative Percent
1	12	1.2	1.3	1.3
2	11	1.1	1.2	2.4
3	5	0.5	0.5	3.0
4	2	0.2	0.2	3.2
5	12	1.2	1.3	4.4
6	6	0.6	0.6	5.1
7	22	2.2	2.3	7.4
8	55	5.5	5.8	13.2
9	85	8.4	9.0	22.2
10	737	73.3	77.8	100.0
don't know	55	5.5	100.0	
don't understand	4	0.4		
Total	1006	100.0		

Mean=9.38, Mode=10, Median=10.00 (1=not a problem at all and 10=a very important problem; don't know and don't understand excluded)

Table 17: Means for ratings given to problems that contribute to deforestation in Armenia in tables 16a through 16f*(in descending order)*

	Mean	Mode	Median
Wood businesses that export wood outside Armenia	9.38	10	10.00
Wood businesses that sell wood in Armenia	9.13	10	10.00
People outside villages who cut wood to sell	8.90	10	10.00
Villagers who cut wood to sell to others	8.13	10	9.00
Villagers who cut wood for their own use	6.71	10	7.00
Grazing of animals	3.53	1	2.00

*(1=not a problem at all and 10=a very important problem;
don't know and don't understand excluded)*

Table 18: Reasons respondents or their families go to forests in Armenia

		Yes	No	Total
Relaxation and recreation	Count	727	279	1006
	percentage	72.3	27.7	100.0
Gathering non-wood products like herbs	Count	497	509	1006
	percentage	49.4	50.6	100.0
Gathering wood for own home fuel use	Count	140	866	1006
	percentage	13.9	86.1	100.0
Cutting wood for sale to others	Count	14	992	1006
	percentage	1.4	98.6	100.0

Table 19: Reasons others in the community use forests in Armenia

		Yes	No	Total
Relaxation and recreation	Count	734	272	1006
	percentage	73.0	27.0	100.0
Gathering non-wood products like herbs	Count	552	454	1006
	percentage	54.9	45.1	100.0
Gathering wood for own home fuel use	Count	260	746	1006
	percentage	25.8	74.2	100.0
Cutting wood for sale to others	Count	85	921	1006
	percentage	8.4	91.6	100.0

Table 20a: Making gas available to all Armenian households is a solution that might help to save forests in Armenia

	Frequency	Percent	Valid Percent	Cumulative Percent
1	6	0.6	0.6	0.6
2	3	0.3	0.3	0.9
3	3	0.3	0.3	1.2
4	3	0.3	0.3	1.5
5	21	2.1	2.1	3.6
6	11	1.1	1.1	4.7
7	22	2.2	2.2	6.9
8	43	4.3	4.3	11.2
9	90	8.9	9.0	20.1
10	802	79.7	79.9	100.0
don't know	1	0.1	100.0	
don't understand	1	0.1		
Total	1006	100.0		

Mean=9.49, Mode=10, Median=10.00 (1=not a solution and 10=a perfect solution; don't know and don't understand excluded)

Table 20b: Providing households with low interest loans to connect to gas is a solution that might help to save forests in Armenia

	Frequency	Percent	Valid Percent	Cumulative Percent
1	14	1.4	1.4	1.4
2	6	0.6	0.6	2.0
3	8	0.8	0.8	2.8
4	10	1.0	1.0	3.8
5	46	4.6	4.6	8.4
6	24	2.4	2.4	10.9
7	42	4.2	4.2	15.1
8	54	5.4	5.4	20.5
9	120	11.9	12.1	32.6
10	671	66.7	67.4	100.0
don't know	8	0.8	100.0	
don't understand	3	0.3		
Total	1006	100.0		

Mean=9.03, Mode=10, Median=10.00 (1=not a solution and 10=a perfect solution; don't know and don't understand excluded)

Table 20c: Government providing monies to guard forests is a solution that might help to save forests in Armenia

	Frequency	Percent	Valid Percent	Cumulative Percent
1	32	3.2	3.2	3.2
2	2	0.2	0.2	3.4
3	8	0.8	0.8	4.2
4	6	0.6	0.6	4.9
5	32	3.2	3.2	8.1
6	31	3.1	3.1	11.2
7	53	5.3	5.4	16.6
8	103	10.2	10.4	27.0
9	105	10.4	10.6	37.6
10	617	61.3	62.4	100.0
don't know	15	1.5	100.0	
don't understand	2	0.2		
Total	1006	100.0		

Mean=8.84, Mode=10, Median=10.00 (1=not a solution and 10=a perfect solution; don't know and don't understand excluded)

Table 20d: Government providing monies to plant trees and restore forests is a solution that might help to save forests in Armenia

	Frequency	Percent	Valid Percent	Cumulative Percent
1	7	0.7	0.7	0.7
2	3	0.3	0.3	1.0
3	3	0.3	0.3	1.3
4	1	0.1	0.1	1.4
5	19	1.9	1.9	3.3
6	17	1.7	1.7	5.0
7	43	4.3	4.3	9.3
8	86	8.5	8.6	17.9
9	86	8.5	8.6	26.5
10	734	73.0	73.5	100.0
don't know	6	0.6	100.0	
don't understand	1	0.1		
Total	1006	100.0		

Mean=9.34, Mode=10, Median=10.00 (1=not a solution and 10=a perfect solution; don't know and don't understand excluded)

Table 21: Means for ratings given to solutions that might help to save forests in Armenia in tables 20a through 20d*(in descending order)*

	Mean	Mode	Median
Making gas available to all Armenian households	9.49	10	10.00
Government providing monies to plant trees and restore forests	9.34	10	10.00
Providing households with low interest loans to connect to gas	9.03	10	10.00
Government providing monies to guard forests	8.84	10	10.00

*(1=not a solution and 10=a perfect solution; don't know and don't understand excluded)***Table 22: Methods used for heating and/or cooking at home***(multiple responses permitted; in descending order)*

	Frequency	Percent of total (1006)
Natural gas	621	61.7
Electricity	394	39.2
Wood	226	22.5
Atar (manure)	223	22.2
Propane gas	169	16.8
Other	10	1.0

Table 23: Use wood at home for fuel - for example, for cooking in the house or for heating the house

	Frequency	Percent
yes	299	29.7
no	707	70.3
Total	1006	100.0

Table 24a: If respondents ever use wood at home for fuel, how wood is obtained				
		Yes	No	Total
Gather from fallen trees and branches myself	Count	174	125	299
	percentage	58.2	41.8	100.0
Buy from trees cut somewhere outside this area	Count	121	178	299
	percentage	40.5	59.5	100.0
Buy from others in the village**	Count	74	133	207
	percentage	35.7	64.3	100.0
Cutting trees myself or by family member	Count	17	282	299
	percentage	5.7	94.3	100.0
Other	Count	30	269	299
	percentage	10.0	90.0	100.0
**asked only in villages				

Table 24b: Means for percentages of ways of getting wood in table 24a	
<i>(in descending order)</i>	
	Mean
Buy from trees cut somewhere outside this area	81.69
Gather from fallen trees and branches myself	71.32
Buy from others in the village**	61.22
Cutting trees myself or by family member	53.24
**asked only in villages	

Table 25: Does the building have gas		
<i>(asked in cities as well as villages with gas)</i>		
	Frequency	Percent
yes	676	75.5
no	219	24.5
Total	895	100.0

Table 26: Why do not use gas even though available in the building		
<i>(open-ended question)</i>		
	Frequency	Percent
lack of finances	38	69.1
have not connected to gas yet	15	27.3
other	2	3.6
Total	55	100.0

Table 27: Responses by urban and rural respondents who do not use gas even though it is available -- would take a low interest loan if offered to bring gas to the home				
<i>(asked in cities as well as villages with gas)</i>				
		Urban	Rural	Total
yes	Count	34	35	69
	percentage	61.8	58.3	60.0
no	Count	12	11	23
	percentage	21.8	18.3	20.0
don't know/can't say	Count	9	14	23
	percentage	16.4	23.3	20.0
Total	Count	55	60	115
	percentage	100.0	100.0	100.0

Table 27a: Why would not take a low interest loan to bring gas to home				
<i>(open-ended question; asked in cities as well as villages with gas)</i>				
		Urban	Rural	Total
afraid of not being able to repay the loan	Count	6	8	14
	percentage	50.0	72.7	60.9
don't have a job for repaying the loan	Count	3	1	4
	percentage	25.0	9.1	17.4
don't have a stable job, afraid of not being able to repay the loan	Count	1	1	2
	percentage	8.3	9.1	8.7
don't want gas	Count	2	1	3
	percentage	16.7	9.1	13.0
Total	Count	12	11	23
	percentage	100.0	100.0	100.0

Table 28: Respondents who graze animals on forest land		
<i>(asked only in villages)</i>		
	Frequency	Percent
yes	111	31.2
no	245	68.8
Total	356	100.0

Table 29: Are other people in the same village grazing animals on forest land
(asked only in villages)

	Frequency	Percent
yes	171	48.0
no	185	52.0
Total	356	100.0

Table 30: What needs to be done so that people in the village stop using wood as fuel
(multiple responses permitted; in descending order;
open-ended question; asked only in villages)

	Frequency	Percent of total (356)
provide with gas	234	65.7
make gas cost cheaper	89	25.0
improve living conditions/solve financial issues	58	16.3
strengthen control of forests	12	3.4
make electricity cheaper	10	2.8
provide with loans	5	1.4
provide with coal	4	1.1
nothing will help since villagers will always use wood	2	0.6
provide with central heating system	2	0.6
provide with manure	1	0.3
don't know/can't say	18	5.1

Demographic data

Table 31: Gender		
	Frequency	Percent
male	324	32.2
female	682	67.8
Total	1006	100.0

Table 32: Age		
	Mean	Median
	44.96	45.00
	Min	Max
	18	75

Table 33: Highest level of education obtained			
	Frequency	Percent	Cumulative Percent
primary school (4 years)	10	1.0	1.0
incomplete secondary school	21	2.1	3.1
secondary school (8 years)	78	7.8	10.8
secondary school (10 years)	318	31.6	42.4
university, college, technical school	335	33.3	75.7
completed university degree (4 or 5 years)	227	22.6	98.3
advanced graduate university degree	17	1.7	100.0
Total	1006	100.0	

Table 34: Electricity bill in AMD last month		
	Mean	Median
	4939.93	3800.00
	Min	Max
	400	65000

Table 35: Gas bill in AMD last month			
	Frequency		
use gas	621	Mean	Median
		7785.68	6000.00
		Min	Max
		450	60000
do not use gas	55		
Total	676		

Table 36: How much is spent on wood for fuel in AMD last month			
	Frequency		
bought wood	173	Mean	Median
		8640.75	7000.00
		Min	Max
		800	30000
do not use wood	707		
got wood for free	111		
not yet bought wood this year	2		
don't know/can't say	13		
Total	1006		

Crosstab 1a: Respondents would report if observed illegal cutting of forest by urban and rural				
		Urban	Rural	Total
yes	Count	422	254	676
	<i>percentage</i>	64.9	71.3	67.2
no	Count	169	76	245
	<i>percentage</i>	26.0	21.3	24.4
don't know/can't say	Count	59	26	85
	<i>percentage</i>	9.1	7.3	8.4
Total	Count	650	356	1006
	<i>percentage</i>	100.0	100.0	100.0

Crosstab 1b: Respondents would report if observed illegal cutting of forest by Yerevan and marz				
		Yerevan	Marz	Total
yes	Count	224	452	676
	<i>percentage</i>	63.8	69.0	67.2
no	Count	94	151	245
	<i>percentage</i>	26.8	23.1	24.4
don't know/can't say	Count	33	52	85
	<i>percentage</i>	9.4	7.9	8.4
Total	Count	351	655	1006
	<i>percentage</i>	100.0	100.0	100.0

Crosstab 1c: Respondents would report if observed illegal cutting of forest by forest adjacent and non-forest adjacent villages				
		Forest adjacent	Non-forest adjacent	Total
yes	Count	94	160	254
	<i>percentage</i>	57.7	82.9	71.3
no	Count	57	19	76
	<i>percentage</i>	35.0	9.8	21.3
don't know/can't say	Count	12	14	26
	<i>percentage</i>	7.4	7.3	7.3
Total	Count	163	193	356
	<i>percentage</i>	100.0	100.0	100.0

Crosstab 1d: Respondents would report if observed illegal cutting of forest by marz
(in descending order by disagreement)

		Yes	No	Don't know/ Can't say	Total
Tavush	Count	23	16	3	42
	percentage	54.8	38.1	7.1	100.0
Lori	Count	51	29	9	89
	percentage	57.3	32.6	10.1	100.0
Kotayk	Count	46	26	13	85
	percentage	54.1	30.6	15.3	100.0
Syunik	Count	31	14	2	47

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Gegharkunik	Count	48	20	5	73
	percentage	65.8	27.4	6.8	100.0
Yerevan	Count	224	94	33	351
	percentage	63.8	26.8	9.4	100.0
Ararat	Count	64	16	5	85
	percentage	75.3	18.8	5.9	100.0
Armavir	Count	65	15	6	86
	percentage	75.6	17.4	7.0	100.0
Shirak	Count	69	12	7	88
	percentage	78.4	13.6	8.0	100.0
Vayots Dzor	Count	14	2	1	17
	percentage	82.4	11.8	5.9	100.0
Aragatsotn	Count	41	1	1	43
	percentage	95.3	2.3	2.3	100.0
Total	Count	676	245	85	1006
	percentage	67.2	24.4	8.4	100.0

Crosstab 2: What is the ONE major negative effect of deforestation by forest adjacent and non-forest adjacent villages				
		Forest adjacent	Non-forest adjacent	Total
drying of springs and rivers	Count	48	27	75
	<i>percentage</i>	29.4	14.0	21.1
desertification	Count	32	56	88
	<i>percentage</i>	19.6	29.0	24.7
micro-climate change	Count	32	56	88
	<i>percentage</i>	19.6	29.0	24.7
loss of biodiversity	Count	17	22	39
	<i>percentage</i>	10.4	11.4	11.0
loss of non-wood products such as mushrooms, herbs and berries	Count	12	8	20
	<i>percentage</i>	7.4	4.1	5.6
landslides	Count	8	7	15
	<i>percentage</i>	4.9	3.6	4.2
erosion and soil loss	Count	5	9	14
	<i>percentage</i>	3.1	4.7	3.9
increase of salt in soil	Count	5	5	10
	<i>percentage</i>	3.1	2.6	2.8
none	Count	1	1	2
	<i>percentage</i>	0.6	0.5	0.6
don't know/can't say	Count	3	2	5
	<i>percentage</i>	1.8	1.0	1.4
Total	Count	163	193	356
	<i>percentage</i>	100.0	100.0	100.0

Crosstab 3a: Respondents or their families go to forests in Armenia for relaxation and recreation by Yerevan and marz				
		Yerevan	Marz	Total
yes	Count	278	449	727
	<i>percentage</i>	79.2	68.5	72.3
no	Count	73	206	279
	<i>percentage</i>	20.8	31.5	27.7
Total	Count	351	655	1006
	<i>percentage</i>	100.0	100.0	100.0

Crosstab 3b: Respondents or their families go to forests in Armenia for relaxation and recreation by forest adjacent and non-forest adjacent villages				
		Forest adjacent	Non-forest adjacent	Total
yes	Count	121	125	246
	<i>percentage</i>	74.2	64.8	69.1
no	Count	42	68	110
	<i>percentage</i>	25.8	35.2	30.9
Total	Count	163	193	356
	<i>percentage</i>	100.0	100.0	100.0

Crosstab 4a: Respondents or their families go to forests in Armenia for gathering non-wood products like herbs by urban and rural				
		Urban	Rural	Total
yes	Count	286	211	497
	<i>percentage</i>	44.0	59.3	49.4
no	Count	364	145	509
	<i>percentage</i>	56.0	40.7	50.6
Total	Count	650	356	1006
	<i>percentage</i>	100.0	100.0	100.0

Crosstab 4b: Respondents or their families go to forests in Armenia for gathering non-wood products like herbs by Yerevan and marz				
		Yerevan	Marz	Total
yes	Count	137	360	497
	<i>percentage</i>	39.0	55.0	49.4
no	Count	214	295	509
	<i>percentage</i>	61.0	45.0	50.6
Total	Count	351	655	1006
	<i>percentage</i>	100.0	100.0	100.0

Crosstab 4c: Respondents or their families go to forests in Armenia for gathering non-wood products like herbs by forest adjacent and non-forest adjacent villages				
		Forest adjacent	Non-forest adjacent	Total
yes	Count	122	89	211
	<i>percentage</i>	74.8	46.1	59.3
no	Count	41	104	145
	<i>percentage</i>	25.2	53.9	40.7
Total	Count	163	193	356
	<i>percentage</i>	100.0	100.0	100.0

Crosstab 4d: Respondents or their families go to forests in Armenia for gathering non-wood products like herbs by villages with and without gas				
		Gas to village	No gas to village	Total
yes	Count	136	75	211
	<i>percentage</i>	55.5	67.6	59.3
no	Count	109	36	145
	<i>percentage</i>	44.5	32.4	40.7
Total	Count	245	111	356
	<i>percentage</i>	100.0	100.0	100.0

Crosstab 5a: Respondents or their families go to forests in Armenia for gathering wood for own home fuel use by urban and rural				
		Urban	Rural	Total
yes	Count	32	108	140
	<i>percentage</i>	4.9	30.3	13.9
no	Count	618	248	866
	<i>percentage</i>	95.1	69.7	86.1
Total	Count	650	356	1006
	<i>percentage</i>	100.0	100.0	100.0

Crosstab 5b: Respondents or their families go to forests in Armenia for gathering wood for own home fuel use by Yerevan and marz				
		Yerevan	Marz	Total
yes	Count	10	130	140
	<i>percentage</i>	2.8	19.8	13.9
no	Count	341	525	866
	<i>percentage</i>	97.2	80.2	86.1
Total	Count	351	655	1006
	<i>percentage</i>	100.0	100.0	100.0

Crosstab 5c: Respondents or their families go to forests in Armenia for gathering wood for own home fuel use by forest adjacent and non-forest adjacent villages				
		Forest adjacent	Non-forest adjacent	Total
yes	Count	95	13	108
	<i>percentage</i>	58.3	6.7	30.3
no	Count	68	180	248
	<i>percentage</i>	41.7	93.3	69.7
Total	Count	163	193	356
	<i>percentage</i>	100.0	100.0	100.0

Crosstab 5d: Respondents or their families go to forests in Armenia for gathering wood for own home fuel use by villages with and without gas				
		Gas to village	No gas to village	Total
yes	Count	67	41	108
	<i>percentage</i>	27.3	36.9	30.3
no	Count	178	70	248
	<i>percentage</i>	72.7	63.1	69.7
Total	Count	245	111	356
	<i>percentage</i>	100.0	100.0	100.0

Crosstab 6: Respondents or their families go to forests in Armenia for cutting wood for sale to others by forest adjacent and non-forest adjacent villages				
		Forest adjacent	Non-forest adjacent	Total
yes	Count	5	0	5
	<i>percentage</i>	3.1	0.0	1.4
no	Count	158	193	351
	<i>percentage</i>	96.9	100.0	98.6
Total	Count	163	193	356
	<i>percentage</i>	100.0	100.0	100.0

Crosstab 7a: Use wood at home for fuel - for example, for cooking or heating by urban and rural				
		Urban	Rural	Total
yes	Count	92	207	299
	<i>percentage</i>	14.2	58.1	29.7
no	Count	558	149	707
	<i>percentage</i>	85.8	41.9	70.3
Total	Count	650	356	1006
	<i>percentage</i>	100.0	100.0	100.0

Crosstab 7b: Use wood at home for fuel - for example, for cooking or heating by Yerevan and marz				
		Yerevan	Marz	Total
yes	Count	20	279	299
	<i>percentage</i>	5.7	42.6	29.7
no	Count	331	376	707
	<i>percentage</i>	94.3	57.4	70.3
Total	Count	351	655	1006
	<i>percentage</i>	100.0	100.0	100.0

Crosstab 7c: Use wood at home for fuel - for example, for cooking or heating by forest adjacent and non-forest adjacent villages				
		Forest adjacent	Non-forest adjacent	Total
yes	Count	134	73	207
	<i>percentage</i>	82.2	37.8	58.1
no	Count	29	120	149
	<i>percentage</i>	17.8	62.2	41.9
Total	Count	163	193	356
	<i>percentage</i>	100.0	100.0	100.0

Crosstab 7d: Use wood at home for fuel - for example, for cooking or heating by villages with and without gas				
		Gas to village	No gas to village	Total
yes	Count	117	90	207
	<i>percentage</i>	47.8	81.1	58.1
no	Count	128	21	149
	<i>percentage</i>	52.2	18.9	41.9
Total	Count	245	111	356
	<i>percentage</i>	100.0	100.0	100.0

Crosstab 7e: Use wood at home for fuel - for example, for cooking or heating by marz				
<i>(in descending order by agreement)</i>				
		Yes	No	Total
Tavush	Count	39	3	42
	<i>percentage</i>	92.9	7.1	100.0
Syunik	Count	36	11	47
	<i>percentage</i>	76.6	23.4	100.0
Lori	Count	45	44	89
	<i>percentage</i>	50.6	49.4	100.0
Gegharkunik	Count	33	40	73
	<i>percentage</i>	45.2	54.8	100.0
Vayots Dzor	Count	7	10	17
	<i>percentage</i>	41.2	58.8	100.0
Kotayk	Count	34	51	85
	<i>percentage</i>	40.0	60.0	100.0
Armavir	Count	30	56	86
	<i>percentage</i>	34.9	65.1	100.0
Ararat	Count	24	61	85
	<i>percentage</i>	28.2	71.8	100.0
Shirak	Count	24	64	88
	<i>percentage</i>	27.3	72.7	100.0
Aragatsotn	Count	7	36	43
	<i>percentage</i>	16.3	83.7	100.0
Yerevan	Count	20	331	351
	<i>percentage</i>	5.7	94.3	100.0
Total	Count	299	707	1006
	<i>percentage</i>	29.7	70.3	100.0

Crosstab 8a: Respondents gather wood from fallen trees and branches by urban and rural				
		Urban	Rural	Total
yes	Count	39	135	174
	<i>percentage</i>	<i>42.4</i>	<i>65.2</i>	<i>58.2</i>
no	Count	53	72	125
	<i>percentage</i>	<i>57.6</i>	<i>34.8</i>	<i>41.8</i>
Total	Count	92	207	299
	<i>percentage</i>	<i>100.0</i>	<i>100.0</i>	<i>100.0</i>

Crosstab 8b: Respondents gather wood from fallen trees and branches by Yerevan and marz				
		Yerevan	Marz	Total
yes	Count	11	163	174
	<i>percentage</i>	<i>55.0</i>	<i>58.4</i>	<i>58.2</i>
no	Count	9	116	125
	<i>percentage</i>	<i>45.0</i>	<i>41.6</i>	<i>41.8</i>
Total	Count	20	279	299
	<i>percentage</i>	<i>100.0</i>	<i>100.0</i>	<i>100.0</i>

Crosstab 8c: Respondents gather wood from fallen trees and branches by forest adjacent and non-forest adjacent villages				
		Forest adjacent	Non-forest adjacent	Total
yes	Count	98	37	135
	<i>percentage</i>	<i>73.1</i>	<i>50.7</i>	<i>65.2</i>
no	Count	36	36	72
	<i>percentage</i>	<i>26.9</i>	<i>49.3</i>	<i>34.8</i>
Total	Count	134	73	207
	<i>percentage</i>	<i>100.0</i>	<i>100.0</i>	<i>100.0</i>

Crosstab 9a: Respondents buy from trees cut somewhere outside this area by urban and rural				
		Urban	Rural	Total
yes	Count	59	62	121
	<i>percentage</i>	<i>64.1</i>	<i>30.0</i>	<i>40.5</i>
no	Count	33	145	178
	<i>percentage</i>	<i>35.9</i>	<i>70.0</i>	<i>59.5</i>
Total	Count	92	207	299
	<i>percentage</i>	<i>100.0</i>	<i>100.0</i>	<i>100.0</i>

Crosstab 9b: Respondents buy from trees cut somewhere outside this area by Yerevan and marz				
		Yerevan	Marz	Total
yes	Count	13	108	121
	<i>percentage</i>	<i>65.0</i>	<i>38.7</i>	<i>40.5</i>
no	Count	7	171	178
	<i>percentage</i>	<i>35.0</i>	<i>61.3</i>	<i>59.5</i>
Total	Count	20	279	299
	<i>percentage</i>	<i>100.0</i>	<i>100.0</i>	<i>100.0</i>

Crosstab 9c: Respondents buy from trees cut somewhere outside this area by forest adjacent and non-forest adjacent villages				
		Forest adjacent	Non-forest adjacent	Total
yes	Count	34	28	62
	<i>percentage</i>	<i>25.4</i>	<i>38.4</i>	<i>30.0</i>
no	Count	100	45	145
	<i>percentage</i>	<i>74.6</i>	<i>61.6</i>	<i>70.0</i>
Total	Count	134	73	207
	<i>percentage</i>	<i>100.0</i>	<i>100.0</i>	<i>100.0</i>

Crosstab 10a: Respondents or their family members cut trees by urban and rural				
		Urban	Rural	Total
yes	Count	1	16	17
	<i>percentage</i>	1.1	7.7	5.7
no	Count	91	191	282
	<i>percentage</i>	98.9	92.3	94.3
Total	Count	92	207	299
	<i>percentage</i>	100.0	100.0	100.0

Crosstab 10b: Respondents or their family members cut trees by Yerevan and marz				
		Yerevan	Marz	Total
yes	Count	0	17	17
	<i>percentage</i>	0.0	6.1	5.7
no	Count	20	262	282
	<i>percentage</i>	100.0	93.9	94.3
Total	Count	20	279	299
	<i>percentage</i>	100.0	100.0	100.0

Crosstab 10c: Respondents or their family members cut trees by forest adjacent and non-forest adjacent villages				
		Forest adjacent	Non-forest adjacent	Total
yes	Count	10	6	16
	<i>percentage</i>	7.5	8.2	7.7
no	Count	124	67	191
	<i>percentage</i>	92.5	91.8	92.3
Total	Count	134	73	207
	<i>percentage</i>	100.0	100.0	100.0

Crosstab 11: Respondents buy from others in the village by forest adjacent and non-forest adjacent villages				
		Forest adjacent	Non-forest adjacent	Total
yes	Count	65	9	74
	<i>percentage</i>	48.5	12.3	35.7
no	Count	69	64	133
	<i>percentage</i>	51.5	87.7	64.3
Total	Count	134	73	207
	<i>percentage</i>	100.0	100.0	100.0

Crosstab 12: Respondents who graze animals on forest land by forest adjacent and non-forest adjacent villages				
		Forest adjacent	Non-forest adjacent	Total
yes	Count	76	35	111
	<i>percentage</i>	46.6	18.1	31.2
no	Count	87	158	245
	<i>percentage</i>	53.4	81.9	68.8
Total	Count	163	193	356
	<i>percentage</i>	100.0	100.0	100.0

Crosstab 13: Are other people in the same village grazing animals on forest land by forest adjacent and non-forest adjacent villages				
		Forest adjacent	Non-forest adjacent	Total
yes	Count	119	52	171
	<i>percentage</i>	73.0	26.9	48.0
no	Count	44	141	185
	<i>percentage</i>	27.0	73.1	52.0
Total	Count	163	193	356
	<i>percentage</i>	100.0	100.0	100.0

Crosstab 14a: What needs to be done so that people in the village stop using wood as fuel by villages with and without gas

(open-ended question; multiple responses permitted)

		Gas to village	No gas to village	Total
provide with gas	Count	128	106	234
	<i>percentage</i>	52.2	95.5	65.7
make gas cost cheaper	Count	85	4	89
	<i>percentage</i>	34.7	3.6	25.0
improve living conditions/ solve financial issues	Count	52	6	58
	<i>percentage</i>	21.2	5.4	16.3
strengthen control of forests	Count	12	0	12
	<i>percentage</i>	4.9	0.0	3.4
make electricity cheaper	Count	7	3	10
	<i>percentage</i>	2.9	2.7	2.8
provide with loans	Count	5	0	5
	<i>percentage</i>	2.0	0.0	1.4
provide with coal	Count	1	3	4
	<i>percentage</i>	0.4	2.7	1.1
nothing will help since villagers will always use wood	Count	2	0	2
	<i>percentage</i>	0.8	0.0	0.6
provide with central heating system	Count	0	2	2
	<i>percentage</i>	0.0	1.8	0.6
provide with manure	Count	1	0	1
	<i>percentage</i>	0.4	0.0	0.3
don't know/can't say	Count	17	1	18
	<i>percentage</i>	6.9	0.9	5.1

Crosstab 14b: What needs to be done so that people in the village stop using wood as fuel by forest adjacent and non-forest adjacent villages

(open-ended question; multiple responses permitted)

		Forest adjacent	Non-forest adjacent	Total
provide with gas	Count	114	120	234
	<i>percentage</i>	69.9	62.2	65.7
make gas cost cheaper	Count	50	39	89
	<i>percentage</i>	30.7	20.2	25.0
improve living conditions/ solve financial issues	Count	14	44	58
	<i>percentage</i>	8.6	22.8	16.3
strengthen control of forests	Count	3	9	12
	<i>percentage</i>	1.8	4.7	3.4
make electricity cheaper	Count	3	7	10
	<i>percentage</i>	1.8	3.6	2.8
provide with loans	Count	0	5	5
	<i>percentage</i>	0.0	2.6	1.4
provide with coal	Count	2	2	4
	<i>percentage</i>	1.2	1.0	1.1
nothing will help since villagers will always use wood	Count	0	2	2
	<i>percentage</i>	0.0	1.0	0.6
provide with central heating system	Count	2	0	2
	<i>percentage</i>	1.2	0.0	0.6
provide with manure	Count	0	1	1
	<i>percentage</i>	0.0	0.5	0.3
don't know/can't say	Count	11	7	18
	<i>percentage</i>	6.7	3.6	5.1