

Chapter 8

Environment and Human Health

The overall demographic processes in Armenia in recent years have seen the following developments: the natural population growth rate has continued to decline, from 4.3 per 1000 in 1998 to 2.12 per 1000 in 2001; the birth rate during this period has declined from 10.4 per 1000 in 1998 to 8.44 per 1000 in 2001. Life expectancy for women has remained stable, whereas life expectancy for men has increased (Table 1.8.1).

Table 1.8.1 Life Expectancy at Birth in Armenia

	Total	Men	Women
1998	74.7	70.8	78.1
1999	74.7	70.8	78.1
2000	72.5	70.5	74.5
2001	73.5	71.0	75.9

Source: National Statistical Service of RA

The death rate in Armenia in 1999 slightly increased (per 100 000 population), but it has since stabilized: 1998, 611.64; 1999, 631.75; 2001, 631.46; 2002, 795.68 (the increase in 2002 was affected by the decrease in total population).

Cardiovascular diseases remain the main cause of death (54.9% of total deaths); neoplasms are in the second place (16.6%); disorders of the endocrine system, nutrition, metabolism and immune system are in third place (6.2%); respiratory system diseases, fourth place (5.7%); and external causes, fifth place (4.1%). (Source: National Statistical Service of RA).

There are differences between trends in the overall morbidity rate and the female morbidity rate. Thus, the overall cancer morbidity rate in the period 1998 to 2002 was relatively stable, whereas the female cancer morbidity rate steadily increased from 124.9 in 1998 to 166.3 in 2002 (calculations based on the female population of fertile age); the breast cancer morbidity rate increased from 33.1 in 1998 to 49.6 in 2002. The infectious diseases morbidity rate recently has been decreasing for all infectious diseases. (Source: National Statistical Service of RA)

Drinking water quality recently has undergone a steady trend towards deterioration. Rural drinking water supply is in the most unfavorable condition: 64% does not meet sanitary requirements. One feature in Armenia is that 95.5% of the drinking water supply is fed by groundwater, of stable quality, that largely meets the requirements of both national and WHO norms in terms of toxicological and microbiological parameters.

In general, drinking water in Armenia is characterized by low mineral content, softness, stable chemical composition, and low content of fluorine and its compounds.

In practically all cities and rural settlements, water is supplied for a scheduled 2-6 hours per day, in spite of its availability in sufficient amounts where it is abstracted. The main reason for this pattern of supply is the extremely poor condition of the water supply network. Thus, annually several thousands of accidents are registered; these result in secondary pollution of drinking water on its way from source to consumer. Consequently, the main human health risk comes

from outbreaks of infectious diseases, rather than an increase in the total intestinal infections morbidity rate.

In the period from 1999 to 2002, 18 outbreaks of infectious diseases caused by drinking water were registered in Armenia, with a total number of 5690 people affected (source: Ministry of Public Health of RA).

Air pollution from vehicles in the Republic has increased significantly due to the higher number of vehicles, deterioration of roads, prevalence out-dated vehicles, and problems with fuel quality (which cannot be always guaranteed).

The availability of heating in houses is a problem as well. In spite of the fact that the energy crisis has been overcome and electricity is available, due to its high price the public, especially in rural areas, has to use other, cheaper and lower quality fuels, including dung (Table 1.8.2).

Table 1.8.2 Distribution of Households by Heating System (in %)

	Total number of households	of which:	
		urban	rural
Total number of households, of which	100	100	100
those heated, using:	94.2	91.5	99.8
- centralized heating	7.0	9.7	1.2
- own heating system	1.7	1.9	1.4
- other (electrical devices, ovens etc.)	85.5	79.9	97.2
those not heated	5.8	8.5	0.2

Source: National Statistical Service of RA

The main sources of fuel for heating of houses (for those that do not have centralized heating systems) are wood (56.5% of population), electricity (17.9%), natural gas (7.2%), light and heavy oil (1.7%) and other types of available fuel (waste lubricant oils, polymer materials and others – 16.7%). The use of these types of fuel has negative impact on air in general as well as in the premises.

About 30% of the adult population of Armenia smokes, and 60% of the total adult male population smokes regularly. Smoking adds to the poor indoor air quality.

Noise is another external factor having a negative impact on human health. Recently, the number of sources of noise has increased drastically. Noise produced by different types of equipment and its impact on health conditions is a new problem. The population often complains about noise produced by means of transportation, facilities for leisure, industrial facilities, alarm signals and other sources of noise. In planning new construction and roads, it is necessary to take into account possible noise generated, though in reality the noise mitigation measures are not envisaged in projects.

Recently, the issue of noise produced by entertainment facilities in cities has become quite problematic. Noise produced by restaurants, cafés, concert halls and other facilities is not sufficiently regulated by the administrative code; consequently it is difficult to prevent.

There are some types of equipment that should not be installed in houses due to high level of noise they produce. Internal structures of buildings do not have sufficient acoustic insulation and

people suffer from noise coming both from outside and from public facilities located in the buildings as well as neighbor apartments.

In 1997, malaria cases started to be registered in Armenia. A special program to combat malaria has been developed. As a result, the number of cases of malaria has decreased drastically (Table 1.8.3).

Table 1.8.3 Cases of Malaria in Armenia

	1998	1999	2000	2001	2002
No. of cases	1167	616	141	79	52

Source: Ministry of Public Health of RA

During recent years a few cases of anthrax have been registered in Armenia (Table 1.8.4).

Table 1.8.4 Cases of Anthrax in Armenia

	1999	2000	2001	2002
No. of cases	17	2	18	3

Source: Ministry of Public Health of RA

To reduce the impact of unfavorable environmental factors on human health, a National Environmental Health Action Plan (NEHAP) has been developed by the Ministry of Public Health of Armenia in close collaboration with other ministries. It was adopted by the Government of the Republic of Armenia on August 1st, 2002, and approved by the President of the Republic of Armenia on August 21st 2002. The national plan includes a list of priority measures (approved by the Government), identifying ministries responsible for their implementation and concrete deadlines for implementation. Thus, implementation involves practical actions to be carried out by different ministries. However, the issue of financing of these measures probably will be among the main problems for implementation.

In Armenia, the State Health and Epidemiology Inspectorate of the Ministry of Public Health is responsible for environmental health, including prevention of environmental impacts on human health. Moreover, the standards for the assessment of the state of the environment are based on health protection (maximal permissible concentrations, other hygienic norms). By law, only the Health and Epidemiology Inspectorate is responsible for carrying out health impact assessments, risk assessments as well as all functions in the sphere of environmental health.

In 2000 to 2001, some normative documents were revised to comply with the existing legislative framework and to meet modern requirements and approaches. As a result, the majority of normative documents (sanitary rules and norms) – including Health Norms for Drinking Water Quality, Health Rules on Noise and Other Physical Factors, and Health Rules on the Provision of Radiation Safety – have been revised and adopted.