

4. ENVIRONMENTAL QUALITY OF LIFE

The quality of the environment is a key factor that influences the overall well-being and the quality of life of people and other living beings. The quality of life is a multidimensional concept that deserves a multidimensional measure; clean air and clean water are, inter alia, two important prerequisites for human wellbeing in the Czech Republic. Air pollution is regarded to be a major environmental health risk: by reducing air pollution levels, countries may expect reduction of the burden from respiratory infections, heart diseases, and lung cancer.

The most significant relationships between water and the quality of life appear not to stem from water quantity per se, but rather from variables related to water infrastructure – the wells, pumping stations, pipes, and sewers that deliver water to residents on the one hand and remove wastewater on the other. Good health level may be related to many benefits, including enhanced access to education and the job market, an increase in productivity and wealth, reduced health care costs, good social climate, and of course, a longer life expectancy.

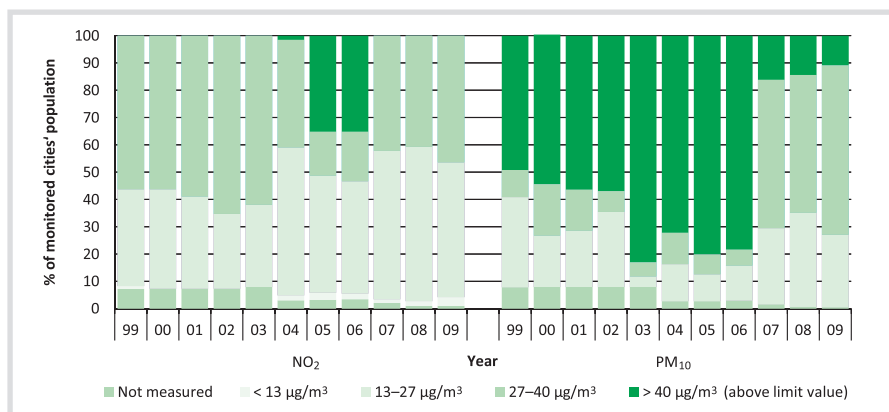


4.1. HEALTH RISKS FROM AIR POLLUTION

The indicator construction is based on the annual mean values of particular pollutants calculated for each of the 26 cities with a population of over 15 thousand included in the Environmental Health Monitoring System in the Czech Republic.

There are serious risks to human health from exposure to PM_{10} and NO_2 generated especially from transport and industry. The presence of PM_{10} in the air (depending on the length of exposure) contributes to a number of health problems – to an increase in the incidence of coughing and breathing difficulty, bronchitis and reduced lung function. The exposure to NO_2 increases the incidence of various respiratory diseases, such as asthma and allergies.

Figure 20: Time trend in the estimated proportion of the population living in the different intervals of PM_{10} and NO_2 in the Czech cities



Source: Czech Information Agency for the Environment, National Institute of Public Health

The highest burden of the monitored population in the Czech cities caused by the above limit concentrations of nitrogen dioxides NO_2 ($>40 \mu\text{g}\cdot\text{m}^{-3}$) appeared in the years 2005 and 2006 (35% of the population). In the years 2007–2009 the above-limit value was not reached and on the contrary, the proportion of the monitored population exposed to the favourable value 13–27 $\mu\text{g}\cdot\text{m}^{-3}$ of NO_2 increased.

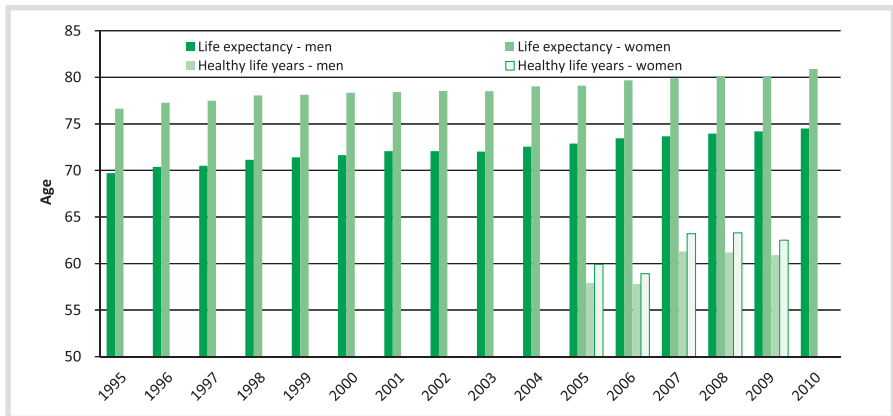
In the years from 1999–2006, the population in the Czech cities suffered from above-limit concentrations of a particulate matter PM_{10} ($>40 \mu\text{g}\cdot\text{m}^{-3}$). The worst situation was in 2003 when 83% of the monitored population was exposed to the above-limit value of this pollutant. In the period between 2007–2009 the situation improved, nevertheless, the limit values were exceeded and a large proportion of the monitored population was exposed to high concentrations (27–40 $\mu\text{g}\cdot\text{m}^{-3}$) of PM_{10} .

4.2. LIFE EXPECTANCY AND HEALTHY LIFE YEARS AT BIRTH

Life expectancy at birth indicates the number of years a newborn infant would live if prevailing patterns of mortality at the time of its birth were to stay the same throughout its life. Healthy life years at birth indicate the number of years a person at birth is expected to live in a healthy condition.

Life expectancy at birth is closely related to health conditions, which are in turn an integral part of the country's development. Since life expectancy is not able to fully answer the question about the quality of life spent in a healthy state in the country, the healthy life year's indicator has been introduced. Healthy life years also monitor health as an economic factor – an increase in healthy life years is one of the main goals or health policies assuming that this would not only improve the situation of individuals but would also lead to economic growth due to lower public healthcare expenditure and higher work performance.

Figure 21: Life expectancy and healthy life years at birth (years)



Source: Czech Statistical Office, Eurostat

The life expectancy for the Czechs has risen by 4.8 years for men and by 4.3 years for women to 74.5 years and 80.9 years, respectively, over the past 15 years. Also the healthy life years – life expectancy years without long term activity limitation – considerably increased (from 59.9 to 63.3 for women and from 57.9 to 61.2 for men) during 2005-2008. The last data shows that healthy life years declined from 63.3 to 62.5 for women and from 62.2 to 60.9 for men.

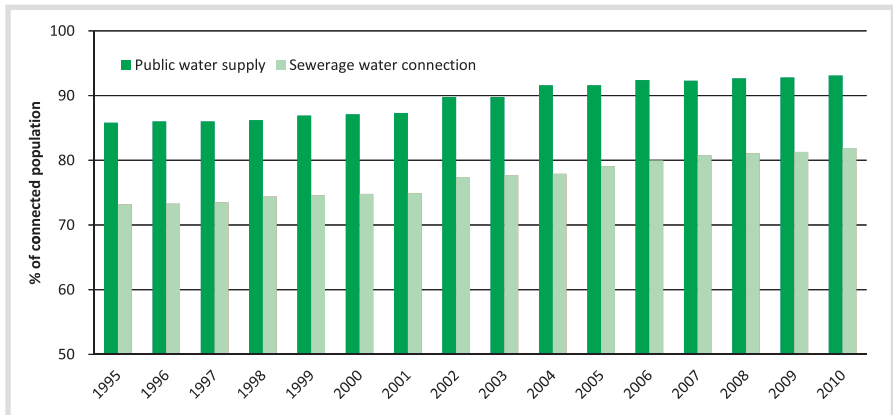
Despite a considerable improvement in the mortality ratio and the health of the Czech population, life expectancy at birth has still not reached the EU27 average. The EU27 average for life expectancy in good health has not been reached either.

4.3. POPULATION CONNECTED TO SEWERAGE TREATMENT AND PUBLIC WATER SUPPLY

The population connected to sewerage treatment and public water supply indicators are constructed as proportions of the total population connected to sewerage systems and to the public water supply network, respectively.

Waste water treatment reduces the amount of discharged pollution and is therefore an essential tool for improving the surface and ground water quality. According to the State Environmental Policy of the Czech Republic, a desirable trend includes increasing the proportion of the population connected to public sewerage systems and to sewerage systems ending in waste water treatment plants. The quality of the water supply – leakages in the distribution network, pipe breaks, and the quality of water at the tap – is still the main concern in many OECD countries (the OECD is working with the UN's Joint Monitoring Programme to identify and test such indicators).

Figure 22: Population connected to sewerage treatment and public water supply (%)



Source: Czech Statistical Office

The proportion of the population connected to the waste water sewerage system increased from 73 to 82% which has been well documented by the development in the waste water management area in the Czech Republic during the last 15 years. The sewerage water treatment was more extensive in larger municipalities; recently, attention has focused on the development of waste water treatment plants in municipalities with a 2,000 to 10,000 population equivalent.

International comparison shows that the Czech Republic lags behind the best EU states which treat waste water discharged by 90-100% of the population. On the other hand, the share of treated water is above the OECD average that has risen from nearly 50% in the early 1980s to about 70% nowadays. Since 1995, the Czech Republic has also increased access to the public water supply from 86 to 93%.