



Health impacts and costs of air pollution in European cities

A new study has shown that life expectancy and monetary benefits increase significantly when levels of fine particles are reduced further in European cities. It also reveals that living near busy roads could be responsible for a substantial amount of poor health attributable to air pollution.

Despite the fact that improving good air quality is a major EU goal, many Member States have exceeded mandated limit values on particles since 2005. National agendas are currently preparing for implementing existing regulations on air pollution and for revising current EU legislation in 2013. As such, it is essential to understand and quantify the effects of air pollutants on health and their economic impacts, as well as realising the benefits of further action.

The study, conducted under the EU Aphekom project¹, used traditional health impact assessment (HIA) methods to estimate the health and monetary gains from complying with WHO guidelines on PM_{2.5}, PM₁₀ and ozone, and from implementing the existing EU legislation on reducing the sulphur content of fuels. The project involved 60 scientists in 12 European countries.

As part of its findings, the study calculated that reducing exposure to PM_{2.5} in 25 European cities to the level recommended by WHO guidelines (10 micrograms per cubic metre) could add up to 22 months to the life expectancy for each citizen –currently aged 30, depending on the city and its current level of pollution. The greatest gain in life expectancy was seen for Bucharest, Romania (22.1 months) and for Budapest, Hungary (19.3 months).

This reduction is valued at some €31.5 billion every year, including savings on health expenditures, absenteeism and intangible costs, such as well-being, life expectancy and quality of life.

The researchers also applied innovative HIA methods to investigate the effects of *ultrafine particles* on the health of populations living near roads carrying heavy traffic. Specifically, in 10 European cities, the study estimated that living near busy roads could be responsible for 15 to 30 per cent of all new cases of asthma in children and for similar or higher percentages of chronic obstructive pulmonary disease and coronary heart disease in people aged 65 and older. In the cities studied, for children and adults, 65 and over, the associated burden is estimated to be approximately €300 million every year.

Lastly, the project evaluated the impact of existing legislation on reducing the sulphur content in fuels in 20 cities. The findings revealed a marked, sustained reduction in ambient sulphur dioxide levels which has prevented about 2,200 premature deaths valued at €192 million.

As well as identifying the health impacts and costs of air pollution and the possible gains from achieving reduction targets, the project developed a process to help scientists, policy makers and other stakeholders share their views and assist decision making on air quality and related environmental-health issues.

Because different stakeholders have different priorities in terms of land use, social issues, health and public transport, using this process structures their exchanges so they can efficiently discuss multiple criteria for evaluating, prioritising and aligning their various needs and choose actions that match their objectives and preferences.

1. Aphekom (Improving Knowledge and Communication for Decision-making on Air Pollution and Health in Europe) was supported by the European Commission under the Programme on Community Action in the Field of Public Health. See: www.aphekom.org

Source: Summary report of the Aphekom project 2008-2011. Improving Knowledge and Communication for Decision Making on Air Pollution and Health in Europe. Report downloadable from: www.aphekom.org/c/document_library/get_file?uuid=5532fafa-921f-4ab1-9ed9-c0148f7da36a&groupId=10347

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