Population exposed to traffic noise

Dimension - Environment

Associated Key Factor:

Attitudes and implementation of principles relating to sustainable development

Data Source:

Publication

i.e. RIVM, 2000: Milieubalans 2000, Bilthoven, http://www.rivm.nl/milieu/nationaal/mb2000_s/

Refer to publisher details at indicator level

General Availability:

Reporting unit:	DB(A)
Reporting level:	all levels from city to national

The indicator:

Defines the percentage of population exposed to four transport noise exposure levels.
Moreover it reveals the percentage of population highly annoyed by traffic noise from various modes.

How is it measured?

Measuring the magnitude of noise pollution is complex. Volume is measured in A weighted decibels [dB(A)]; a level above 65 dB(A) is considered unacceptable and incompatible with certain land uses in OECD countries. However, a number of different parameters must be factored into an indicator of noise; volume, pitch, frequency, duration, and variability. Noise indicators are typically an average of volume and duration over a fixed period of time. The context in which the noise occurs is important; a noise which may be considered acceptable in a working environment during the day would be unacceptable in a residential neighbourhood at night. Similarly, noise which is expected, for example the acceleration of a truck which is visible, may be less annoying than that which is unexpected, such as the same truck when the auditor cannot see it (Filippi p. 129). In addition, the same volume of noise may be
more tolerable when it is intermittent than when it is constant; thus railway noise can be more acceptable than quieter but more constant noise from road traffic (Kürer p. 494). Exposure is also frequently qualified by the number of people or share of the population exposed to this level of noise, or exposed to it for more than a fixed per cent of the time. However, obtaining data on actual exposures to noise is difficult. In addition, it is somewhat difficult to compare noise from different modes of transportation as these are measured with different metrics.

What is the policy relevance of the indicator?

Noise affects people physiologically and psychologically: noise levels above 40 dB Laeq 2 can influence well-being, with most people being moderately annoyed at 50 dB LAeq and seriously annoyed at 55 dB LAeq. Levels above 65 dB LAeq are detrimental to health (WHO, 2000). Overall, the external costs of road and rail traffic noise have been estimated at some 0.4 % of GDP (ECMT, 1998).

The Indicator is relevant for the following pathways of the FORESIGHT FOR TRANSPORT excercise: