

A commentary by Prof. Dr.-Ing. Klaus Genuit

Rethinking Noise – Why Perception and Context Matters

The study “Environmental Noise in Europe 2025,” published by the European Environment Agency (EEA) in June 2025, presents alarming evidence of the persistent high levels of exposure to environmental noise among the European population. According to current data from the German Federal Environment Agency (UBA, 2024), approximately 16 million people in Germany are significantly disturbed by traffic noise, with proven health consequences including sleep disorders, increased blood pressure, and cardiovascular diseases.

These figures underscore the need for a more serious and nuanced approach to addressing the issue of noise. Current practice relies almost exclusively on objectively measurable acoustic parameters, in particular the energy-related sound pressure level (dB(A)). These parameters are undoubtedly relevant, allowing for comparisons, standardization, and legal assessment of noise exposure. However, they are not sufficient to capture the experience of noise.

From a psychoacoustic perspective, noise is not just a physical quantity, but a subjectively experienced phenomenon. Whether a sound is perceived as annoying depends on numerous factors, including context, controllability, frequency of repetition, individual expectations, as well as sociocultural and emotional evaluations. There is a difference between perceiving the sound of an airplane as a technical disturbance or as a symbol of mobility.

A forward-looking approach that considers these findings is the DIN/ISO 12913 soundscape standard. It integrates physical measurement methods with qualitative techniques to capture subjective perceptions. Since the 1990s, soundscape research has aimed to develop assessment and design strategies that go beyond simple noise control. The focus is on actively shaping acoustic environments—not just by reducing unwanted noise but also by intentionally adding positive sound sources, such as nature sounds or water noises. The standard offers a framework and methodological guidelines for assessment, evaluation, and planning.

The involvement of the local population is key to this. Only when people's subjective perceptions are consistently recorded and integrated into planning can solutions be found that are accepted and effective over the long term.

The soundscape approach provides an opportunity to see environmental noise not just as a problem, but as a part of our living space's design. This shift in perspective has been long overdue. After all, quality of life through sound isn't only about eliminating noise, but about intentionally shaping acoustic diversity—tailored to the location, use, and people.