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Towards operational information to support Noise Policy in EU

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Note: The opinions expressed by the speaker are of a personal nature and do not necessarily reflect the views of the EEA, the European Commission or any other Community Institute.

Introduction

The situation today, as we approach the threshold of the next century, is that environmental noise - associated with all human activities but caused mainly by the various transport modes as well as industrial and recreational activities- remains one of the main environmental problems in Europe and the source of an increasing number of complaints from the public. In fact European citizens when asked about their main environmental concerns usually put noise as the main cause of distress. And why does it continue to be so when it is such a primary perturbation ? Is it because it is not often fatal ?

A lot has been said but little has been done. And noise continues to be at the top of citizen complaints.

Noise has often been addressed as a problem of urban areas only. Soon more than half of the world's population -around 3 billion people- will live in urban areas. Meanwhile in the developed world more than 70% of citizens already live in cities, so the urban stress that noise generates affects more people every day and night and with continuing growth in transportation noise the future ahead looks bleak.

The latest estimations reveal that a considerable percentage of the EU's population is exposed to high noise levels and as a result of that the Commission reviewed the environmental noise targets set in the 5EAP .

It has been demonstrated (by WHO among others) that community noise may be detrimental to health. It may have a number of direct adverse effects other than hearing damage, such as interference with communication, annoyance, sleep disturbance, cardiovascular and psycho-physiological effects, social behaviour etc., and in specific environments, certain populations (such as young children) are at greater risk from the effects of noise.

Protecting the health of the population is the primary goal of all public efforts to control individual and community exposure to noise.

What is more, with the lowest estimates of the annual cost of European noise at over 12 billion ECU, clearly the magnitude of the problem has reached disturbing dimensions.

The situation at European level regarding noise is very well known to the people invited to this Conference and although there is such a serious problem (noise) remedial action to date has been fragmentary and weak.

There are different procedures, noise indices and noise limits both sourcewise and countrywise, so comparisons or unified approach are troublesome or impossible, which makes decision making very difficult. It seems like we are paralysed in a way…

But the lack of fully comparable information should not be used as an a excuse. We already know enough to act here efficiently.

And now there is a great opportunity for an awakening … following the Commission's Green Paper and subsequent proposal for a Framework Directive for Environmental Noise and Directives on Noise Emission through W.G's etc.

And the European Environment Agency should serve that need and purpose (and hopefully the required minimum personnel and budgetary resources will follow).

About the EEA

The goal of the EEA is defined in Regulation 1210/90 "To provide the Community and Member States with objective, reliable and comparable environmental information"

The purpose of the Agency is to develop and deliver the best available environmental information to policy makers, public authorities and socio-economic agents, and to the public, particularly the environmentally minded and active elements in civil society which you represent.

The Agency is open to other European countries who share its goals.
Our mission statement emphasises the production and dissemination of "timely, targeted, relevant and reliable information".

We now have our staff quota of about 70 people, half of whom are scientists, experts and managers. That isn't very many but they are all involved in project management, and in developing and using the monitoring and assessment capacities, of the Community and Member States, the European Information and Observation Network (EIONET) which the Regulation mandated us to create and co-ordinate. Built on national environmental monitoring and information capacity that joins more than 450 institutions as Main Component Elements (MCEs) some of them identified as National Reference Centres (NRCs) and all coordinated by National Focal Point (NFPs). In addition, leading institutions are selected as European Topic Centres (ETCs) to work on specific areas on behalf of and in collaboration with the National Reference Centres.

Through this network, we have access to many more valuable resources than the rather small budget and staffing levels of the EEA alone suggest.

We are exploiting the best available informatics and telematics to connect us to the information systems of the EU and Member States, thanks to a Wide Area Network (WAN) that is partly financed by an IDA (Interchange of Data between Administrations) grant from the EU. We are also connected to the public, via the Internet. Our homepage now receives more than 300,000 hits a month.

When completed this year the WAN will turn the EIONET into a European Environmental Reference Centre, which is open to the East and will soon open to the South (the Mediterranean and its Observatories), and to the wider world, via joint

projects with the US EPA and the G7 Group. In the EEA we are delivering a range of products and services through our Multiannual Work Programme.
In fact, a House is rather a good representation of our work. It illustrates what we are doing, building the foundations of EIONET, analysing and integrating data and turning it into indicators and other meaningful information for policy makers and the public.
We are building an information model (ENVISION) and related capacities. The main components being the Network - the Monitoring to Reporting capacity and the Reference Centre.

Our approach to the causes and solutions to environmental problems is comprehensive, focusing on Drivers, Pressures, States, Impacts and Responses. We aim to provide the best available information on the DPSIR elements, their inter-connections, and on the effectiveness of Responses, for integrated management planning, if possible, in the "acoustical environment" area.

And all these capacities should also be put at the service of a more active and efficient noise abatement policy at EU, MS and regional and above all local level.

European Environment Agency's experience with noise data

During the gathering of data for the 1995 and 1998 state of the environment reports by the European Environment Agency the measurements of noise exposure levels and the exposure of populations remained far from comprehensive and the data were infrequently updated often using simplistic models. This was reported in the Green Paper (and was one of the main reasons that caused the Commission to act on it). When the noise data is poor, it is very difficult -if not impossible- to compare and consequently it is of no operational value at a decision making level.

It is clearly understood that without adequate information it is not possible to fulfil the Community target which is the monitoring of the progress made towards the overall noise abatement targets, such as those set out in the 5th Environmental Action Programme Review. Besides, without proper information, all the choices about the cost effectiveness of the various policies, plans and regulations cannot be assessed thoroughly and decisions for actions at the various levels (national, regional or local) cannot be properly planned and supported.

The Commission stated that improvements in noise data, its comparability and monitoring and the provision of information to the public are the main priorities for short and medium term action and it is considering ways to establish a framework for such actions. The results should help overcome the above mentioned problems and can assist national and local authorities as well as the Community to take more informed decisions about the noise measures for which they are responsible. One of the measures that could be included in a directive proposal includes provisions for the exchange of comparable information on noise exposure between Member States, and as reported in the Green Paper, the data could be collected and made available by the European Environment Agency.

The multitude and complexities of the possible human reactions to living in a noisy environment that changes continuously during the day and night and from one location to another must lead to a careful selection of the key statistical indicators for the human reaction as well as for the noise exposure. (even the standard definition of noise as unwanted sound implies that there is a subjective component in the evaluation -i.e. the degree of the "unwantedness" of the sound).

What have we done so far in the EEA?

Regarding the European Environment Agency's short term deliverables, given that noise is a vital component of the so called urban stress (indicated in the 5th EAP and in relation with the sustainable development in the EU15), various noise issues are examined and data collected under the general context of urban stress in the EU State of the Environment Report 98 including the following :

- urban population noise exposure
- noise level data for (selected) cities and airports
- information on expected technological developments in the noise emission of road vehicles and tyres, aircraft and other noise reduction measures
- estimation of Europe's aviation and road traffic noise exposure
- economical aspects involved in future reduction of traffic noise, and
- analysis of national and international policies regarding traffic noise

so when the report is published in early 1999, it will provide a basis for societal and environmental trends for noise exposure in Europe.

EEA's specific response -
The use of noise information : the noise mapping and monitoring process

Given the excellent opportunity of the forthcoming Experts Working Groups on noise issues, we believe the time was appropriate to revise and reorganise our long-term plans.

Once the problems of a multiplicity of different noise units and comparisons used for the assessment of environmental noise have been overcome and the rationalisation and harmonisation of limits and methods throughout Europe are a fact, one of the main focuses of effort will be the elaboration of guidelines on how noise monitoring and assessment should be realised to ensure valid and comparable data - for all the Member States - and policy makers throughout Europe.

The noise information collecting process, depending on the level of reporting, might vary in degrees of accuracy and in-depth analysis since local or national level may have the same overall needs and targets but have different priorities, response times and potential efficiency. As stated in the Green Paper "the local nature of noise problems does not mean that all action is best taken at local level" due to the fact that "generally the sources of environmental noise are not of local origin".

The establishment of noise information programmes to check on the achievement of targets and the provision of reliable information to the general public and decision

makers can be a force to increase the priority needed to be given at all levels to the implementation of meaningful action to reduce noise especially at local level.

In the EEA, we believe that noise mapping can be a powerful instrument, providing an effective yet relatively inexpensive way, to proceed with the visualisation and assessment of the urban acoustical environment. And one of the ways to start noise data collection and presentation will be through the compilation of such noise maps.

Noise mapping aims not only to provide a visual representation of the noise profile at a given geographical area (such as a city), but can work on a two way basis : maps can show the dimension of the noise impact (for example as a percentage of population affected by a certain high level of noise) meanwhile they can identify noise black spots where action is required or quiet areas where noise should not increase.

By adding and combining other information (for example on population density and building occupancy), a map can be developed which displays operational information identifying numerically the actual number of people exposed to the undesirable noise level i.e. noise sources, sensitive receivers, % of population exposed in certain noise categories etc. to support local, regional or national action taking against various types of noise.

In that way the compilation of noise maps becomes a fundamental tool to find out about the noise problem in cities as well as for planning actions (such as erecting a noise barrier or rearranging traffic distribution) to meet future needs for a better acoustical environment.

The data can be collected and presented in appropriate ways to all those concerned, from simple charts and maps for the general public up to more scientific reports elaborating on certain parameters and indices which will be available to specialists and policy makers.

As a consequence, noise mitigation plans to meet specific targets will be possible and then by updating the maps, at given intervals, it will be easy to monitor the effect of these plans and re-evaluate actions.

Through this process it will become easier to perform cost-benefit analysis of our plans and actions which eventually lead to more sustainable policies.
After some time of consistent monitoring and reporting, noise maps can help establish trends that will test the policies and plans for noise abatement locally, regionally and nationally.

Our steps will encourage local and regional action together with national commitment to noise monitoring and mapping based on commonly agreed principles and techniques and in a few years, improvements in computer and information technology may develop new ways and systems for preparing and presenting noise information.

Noise mapping will undoubtedly raise public awareness of noise issues locally, regionally and nationally thus promoting another key issue process, i.e. the right of the public to know about the state of the environment.

Economic factors, convenience and lifestyle all affect our noise annoyance judgement and may even make it fluctuate with time. That is why regarding noise and climate, special attention should be given to the particular lifestyles of southern European countries such as Spain, Italy and Greece.

By providing those involved with policy making with the necessary quantity and quality of information, the goal of improving the quality of the acoustic environment in our cities will be given the place it deserves at the various planning levels.

Conclusion

Sustainable development means that we have to introduce accountable noise abatement development programmes and related noise monitoring systems to continuously assess and inform on whether we are making progress or not. And the way to do that is by using the Best Available Information (BAI) to support the improvements in the acoustical environment and to progress towards sustainable development.

The first joint noise mapping using a preliminary harmonized calculation method is not expected to be produced until the year 2002 : the EEA cannot leave that long a period of time unexploited.

So apart from our immediate and intense involvement with the Working Groups we will examine requirements for the setup of a European data bank on noise information (in accordance with the terms of reference of the WG 3 Computation & Measurement) and we plan the production of a report for 1999 (which will address all the parameters dealing with regular reporting on the issue).

Meanwhile, we are considering the introduction of a European Topic Centre on noise or developing an Urban Environment Topic Centre dealing with Air Pollution, Noise and Traffic as mostly urban problems, if resources permit in a few years time.

Depending on the findings of the Working Groups and after the harmonisation of the methods, indices and targets process is finished, the development of more accurate mapping techniques will be backed by the continuous improvement and growth of the EIONET which will result in an operational network where countries are co-operating with each other towards our common goal - to deliver reliable, objective and comparable information on the acoustical environment at European level.

To this end the European Environment Agency working with the member states and the Commission will take the necessary actions to ensure the exchange of reliable and comparable European information on noise issues and to provide a sound basis for reference and decision making.