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How European noise policies can support actions at a local level

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ABSTRACT

Nowadays, a lot of the competent bodies as meant in the Environmental Noise Directive have finalized their Noise Maps and most of them have set up their Action Plans. Provisional data en data from a Noise Questionnaire that was set out by the Working Group Noise of EUROCITIES give a global insight in the noise situation in European agglomerations. As generally known most of the noise exposed people are living in cities. This is not surprising because more than 70% of the European citizens are living in cities and their numbers are still increasing [EUROSTAT]. This means that the number of exposed and annoyed people in Europe will increase as well if measures stay behind. The percentage of people that is exposed to 55 dB L_{DEN} amounts to 50 per cent and the percentage of people that is exposed to noise levels above 65 dB L_{DEN} amounts to 15 per cent. This is based on the EUROCITIES Noise Questionnaire that was set out among 130 large cities in Europe. Approximately, 44 per cent of the cities responded, which means that the outcomes of the analysis are well founded and can be used for an estimation of exposed people in urbanized areas in Europe. In this paper, some suggestions will be done towards the European Commission and European Parliament about how to support the actions that must be taken at the local level.

1. INTRODUCTION

EUROCITIES is the network of major European cities. Founded in 1986, the network brings together the local governments of more than 130 large cities in over 30 European countries. EUROCITIES provides a platform for its member cities to share knowledge and ideas, to exchange experiences, to analyze common problems and develop innovative solutions, through a wide range of Forums, Working Groups, Projects, activities and events. EUROCITIES gives cities a voice in Europe, by engaging in dialogue with the European institutions on all aspects of EU legislation, policies and programmes that have an impact on cities and their citizens. Within the EUROCITIES network Working Group Noise (WGN) is established in 2006. The objectives of the WGN are (a) exchange of experiences and knowledge on Noise, Noise effects and Noise Abatement, (b) influencing the European legislation and requirements, (c) execute projects to gain more knowledge about noise and noise effects and last but not least (d) gaining awareness among public, policymakers and politicians on all levels. The overarching aim of the WGN is to achieve a good acoustical climate in cities by encouraging stakeholders to take actions to lower the noise or to prevent unnecessary noise by choosing low noise products or services. This aim is addressed to the local, the national and the European authorities as well. Cities cannot solve their noise problems solely. Currently, the WGN is presided by the city of Rotterdam.

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More than 20 cities are participating in the WGN. Most of them are coming from the so called EU15 Member States and Norway, see figure 1.

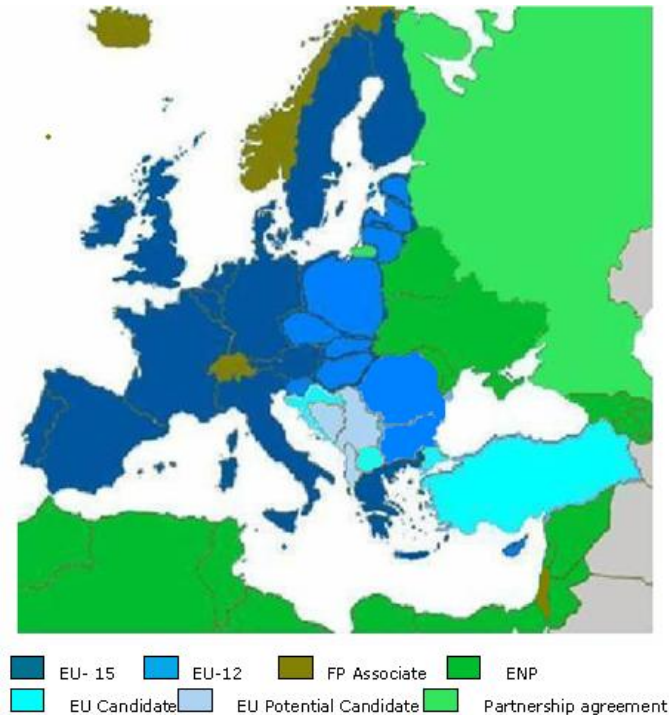


Figure 1: EU 15 Member States

The WGN was relaunched in the summer of 2006 and has met several times in different places over Europe. In their consecutive work plans for 2007-2009 many activities had been planned. The most important and appealing activities that WGN has undertaken last years are:

- Contribution in consultations on rolling stock, outdoor machinery and tyre limits
- Presentations on congresses like Internoise, Eurnoise, DAGA etc. about the objectives of the WGN
- WGN has organized a congress called “Noise in the City” in Amsterdam
- Speaking in the committees of the Euro Parliament about noise issues
- Noise Questionnaire among all EUROCITIES cities
- Position paper on the Environmental Noise Directive 2002/49/EC, abbreviated as END
- Many letter, e-mails and phone calls to the European Commission or Members of the Euro Parliament
- WGN contributed on the Quality of Life report that was produced by European Environmental Agency

And, a lot of other activities were done, see the weblog of the EUROCITIES’ working group noise at <http://workinggroupnoise.web-log.nl>. This paper is in particularly focussed on the outcomes of the Noise Questionnaire and the content of the Position Paper on the END.

2. NOISE QUESTIONNAIRE

In 2008 EUROCITIES' Working Group Noise has set out a noise questionnaire among all 130 connected cities in Europe. This for the reason that currently more than 70% of the European residents are living in cities and their numbers will increase up to 80% the next decades. Cities have always been a magnet for people to live and work. An increase of city inhabitants will probably mean that the number of cars and the number of kilometres covered will increase if people don't switch to more sustainable modes of transport and insufficient (or ineffective) measures are used. Nowadays around 50% of European citizens are exposed to noise levels higher than 55 decibel (dB). And around 15% are exposed to noise levels higher than 65 dB. If no additional (better) measures are taken, these percentages will increase dramatically. Surveys done by several institutions show that noise not only causes annoyance and sleep disturbance but also causes irreversible health effects like high blood pressure, myocardial infarctions, heart attacks and strokes. This could even lead to death. Surveys done by Miedema (TNO), Berry (DEFRA), Babisch (UBA), EU, Kim(WHO), , , Jarup and others have shown that there is enough evidence for all these health effects. Recent surveys done by the Dutch Institute for Environmental Health Assessment (van Kempen et al, RIVM) showed that young children exposed to high noise levels demonstrate a higher risk of suffering from learning disabilities (reduced reading memory). Thus, if traffic and vulnerable groups increase in coming years, the number of unhealthy people will increase if insufficient measures are taken.

Noise does not only affect health. It also influences the value of real estate. The house price can drop from 0.1 % to 3.2 % per extra decibel depending on the situation in a city or country and depending on the house markets. This means that a lot of money is lost. For Gjestland it was calculated that the total loss of money (due to noise related health problems and depreciation or real estate) amounts to €40 billion per year. Noise affects health and house prices but it also lowers the quality of life. This means that cities become less attractive for people with high incomes and families with young children. Footloose companies will remove or do not settle in an area which is polluted by bad air and noise as well. Based on this, the Working Group Noise (WGN) has been set up within the EUROCITIES network with the goal of finding best practices for urban areas and influencing European legislation and requirements on noise. Besides this, WGN exchanges information between cities and undertakes projects. WGN has undertaken the noise questionnaire in order to streamline its work and to verify if it is on the right course. The noise questionnaire was sent to around 130 cities, 57 of which responded – a response rate of 44%.

The main conclusions that could be derived from the Noise Questionnaire are:

- About 44% of the cities responded to the noise questionnaire.
- In general, most cities are aware of the fact that noise is a serious problem in cities but whether there is a sense of urgency is doubtful..
- At times, it seemed like the person who filled in the noise questionnaire had inadequate knowledge on noise issues and EU policy. It's indubitably that those cities do not have any noise expertise in their departments.
- Many cities believe that more should be done to tackle noise problems.
- Noise Policy, tackling noise at the source and stricter norms for vehicles, mopeds, motors, trains, trams, air planes etc. are needed.
- Outdoor equipment needs to have stricter noise limits.
- More research is needed on some subjects (budgets, support) and the project proposals done in the recommendations, see below (ENNEM, DINOMAC).
- Based on some of the useful answers provided, WGN has been able to make some good recommendations (see below)

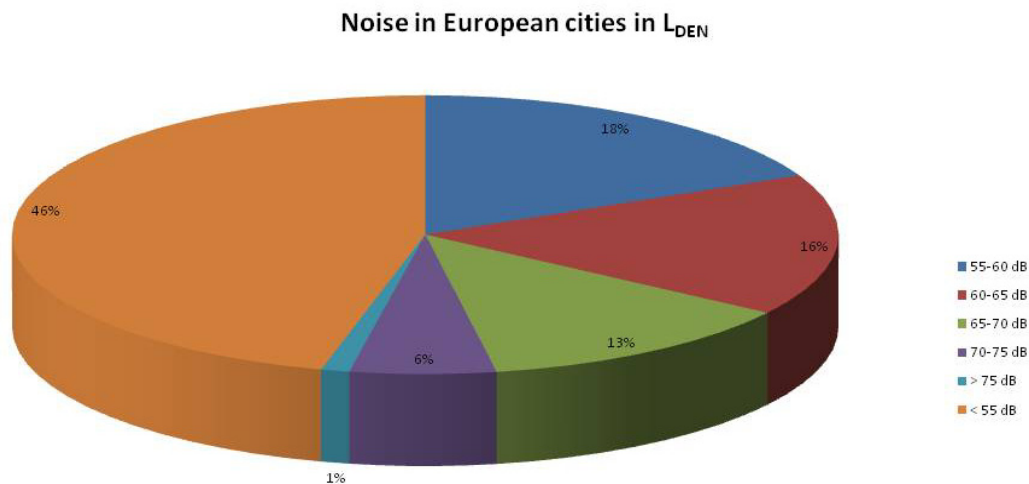


Figure 2: Noise in European cities

The recommendation that were done by the WGN are as follows:

1. During its meetings, EUROCITIES' WGN should pay attention to construction noise, recreational noise and neighbourhood noise. It should gather knowledge and experience on noise and share this with EUROCITIES members by means of newsletters, websites, web logs, leaflets and reports.

2. WGN should explore the setting up of a European network of cities that will monitor noise by using noise measurements. This could be called ENNEM (standing for European Noise-monitoring Network of EUROCITIES Members). This network should have the following goals:

- exchanging experiences and knowledge between cities
- improving the methods used
- harmonising the method
- noise measurements calculations

3. Better exchange of information on measures that could be taken to reduce noise in urban situations and combined measures that are beneficial for noise and other (environmental) issues like air quality, energy, road safety, urban sprawl, and making these more accessible.

A lot of information is available in a number of EU projects like the Silence, Q-city project, SMILE, PRONET, CALM I and II etc but EUROCITIES members also have a lot of information. WGN is considering to support or create a project - DINOMAC - under FP7. Disappointing experiences from cities across Europe are included as lessons for the future and integrated measures as well. This project certainly will promote quiet road surfaces as one of the most efficient measures.

5. WGN should promote the designation and preservation of Quiet Urban Areas in European cities. There is a need for criteria for these kinds of areas. Possibly WGN could cooperate with the city of Florence, Vie en rose (Italian consultant), the University of Florence etc. which are making a proposal for a more harmonised approach to designate and preserve quiet urban areas (matrix project).

6. During the evaluation of the Environmental Noise Directive (END), EUROCITIES will ask the European Commission to make the Good Practice Guide an official EU document after combining this with the Good Practice guide published by the NOMEPORTS project on industrial and harbour noise.

7. WGN will continue to pay attention to the harmful effects of noise on people and will raise public awareness of these effects. Besides this, WGN will advocate adequate action on all administrative levels. WGN will advise its members on the technical outcomes of the noise questionnaire. Depending on the outcomes of the Gaining Political Interest project, a study that was commissioned by WGN to the Radboud University Nijmegen and that will reach tools to gain more interest among policy makers and politicians, other instruments will be used.

3. POSITION PAPER ON THE END 2002/49/EC

Another important work that has been done by the WGN is the production of a position paper on the Environmental Noise Directive 2002/49/49. In Article 11.1 of Directive 2002/49/EC of the European Parliament and of the Council of 25 June 2002, relating to the assessment and management of environmental noise is required that no later than 18 July 2009, the Commission shall submit to the European Parliament and the Council a report on its implementation. The Directive is commonly referred to as the Environmental Noise Directive and is often, abbreviated as to the END. The position paper does not only reflect the experiences and problems encountered until now but it also reflects the lessons learnt during the first round making strategic noise maps and subsequent noise action plans. It is suggested that the recommendations made in this Position paper offer a sound basis for improving END and thus improving the approach to making strategic noise maps and noise action plans during the second round (2012/2013) and thereby helping to ensure that this second round results in a significant reduction of the number of exposed people in Europe. Some important findings from the position paper are mentioned below.

In general could be concluded that the Noise Maps have resulted in a better insight in the noise situation in Europe. Before the END required Member States to produce noise maps and noise action plans many authorities were reluctant to establish and provide readily available information on the noise situation in their territories. In fact only in a few Member States some countries noise was identified as a major problem and but in most of these no significant actions were taken to diminish the noise where there were problems. Thus the benefit of the END is that information on noise exposure has now been produced in all Member State and the extent of this data will be increased in the second round of noise mapping. Also, the public and the politicians are now aware of the presence and magnitude of noise pollution in their communities.

In many cities no data infrastructure or channels for acquiring the necessary data (traffic and road, industrial, geographical and demographical), even if some of it were already available, existed. Therefore, it took a great deal lot of time, effort and expense to acquire the necessary data and to erect these infrastructures or channels because data providers/owners were reluctant or unable to deliver the data in question. In many cases data capture was based on a one off action which suggests that similar problems will be faced in the second round of Noise Mapping (2012).

Despite the availability of noise maps up until now (April 2009) it has to be said that there is little evidence that any significant progress has been made in avoiding, preventing and reducing noise all over Europe. Therefore, achievement of the first objective mentioned in Article 1 of the END is still far away and it doubtful if any Member State is on course to meet this objective. A Noise Questionnaire that was sent out by EUROCIITIES, see above, shows that more than 50 per cent of the European citizens living in large cities are exposed to noise level above 55 dB L_{DEN} and around 15 per cent of the citizens are exposed to noise levels above 65 dB L_{DEN} . Comparing this with the figures of the Green Paper no remarkable progress has been made yet in lowering the number of exposed people..

The commitment of politicians and policy makers for a proper noise approach at a local level by prevention and reduction initiatives seems to be low. Reason for this seem to be that resources are

lacking or insufficient in order to realize improvements in the local acoustical situation within Member States.

The timetable for delivering Noise Maps and Noise Action Plans has been too tight for many Member States. By the completion and reporting dates established in the END the majority of competent bodies had not finalized their Noise Maps and/or Noise Action Plans. The time in between producing the Noise Maps and the subsequent Noise Action Plans was far too short. More time was needed because of the nature (strategic which means more aggregated) of the Noise Map. The Noise Map as meant in the END is strategic which means that this gives more or less a global view of the noise at a particular area. For making action plans more detailed information, probably based on more detailed input data is needed. This all takes a great deal of time!

It is felt that the END pays little attention on the issue of quiet areas and the definition given in Article 3m allows for much variation and should be improved. The definition given in END about Quiet Areas in rural areas is poor and can be improved and Quiet Urban Areas are missing in the END while those areas are very important for relaxation of the noise exposed and stressed people living nearby in the city. By visiting a Quiet Urban Area people can flee from the noise and stay for a while in a more natural soundscape. Criteria for such a Quiet Urban Area could be delivered by a guidance book or something else related to the END.

In the Green Paper on Future Noise it is suggested that cumulative maps should also be produced. In the END this option is not included. A cumulative or combined map could give more insight in the total numbers of exposed/annoyed people and could be helpful for policy making and monitoring the overall acoustic climate in the city or agglomeration. Advice on how to add the levels from different sources is needed then.

A compulsory date that the measures mentioned in the Action Plan must be implemented would be useful. This kind of deadline is used in other EU legislation (e.g. CO₂ limits). Targets in terms of percentage of exposed/annoyed people that must be reduced in 10 years are not provided. This means that the END only compels Member States to make Noise Maps, to make Action Plans and to designate hotspots. That means the END only forces Member States to make some efforts on noise but not to reduce the noise! EURO CITIES believes that this needs to be changed.

The END contains many terms, phrases, and sentences which could lead to different interpretations; not only by Member States but also by all parties involved in the implementation and the activities of the END. This has led to differences in national legislation as far as this the obligations of the END are concerned. e.g., in Germany only the noise from enterprises mentioned in the IPPC directive, is considered in the Noise Maps. However, in the Netherlands the zoned industrial areas according to the Dutch Noise Act are put in the Noise Maps which means that small and medium sized enterprises are also included. Furthermore, the definitions used in the END do not comply with the metrics and/or definitions used in Member States.

Another point of interest is the lack of an European support desk. During the processes of making Noise Maps and Noise Action Plans many questions were risen amongst the competent bodies about what is meant by various parts of the END, how to interpret it etc. The presence of a European wide serving helpdesk would have been very helpful and should be considered before the second round of mapping commences.

Many reports about the action that may be taken to reduce and manage noise have been published during recent decades but many civil servants in city noise experts are unaware of these reports and the possible solutions they identify. Although most of these reports are available on the Internet, the

information they contain does not always relate to the normal of these civil servants and city experts, the information is too wide spread, has too many entries and furthermore is not helpful to the lay person. For cities and their experts awareness of, and accessibility to, these reports. In order to help facilitate this some EUROcities cities, together with universities and relevant institutes all over Europe, developed the DINOMAC proposal during the FP7 call. The proposed project which has the full title of 'Dissemination of NOise measures and Management Amongst Cities' aims to bring knowledge and information about viable noise actions and measures and thus how noise in cities may be managed to all parties involved in this process (e.g. civil servants city experts and their advisors).

Another issue concerns noise hotspots, (also called as black spots). It is unclear how to identify these hotspots as no criteria or methods are provided by the END. This means that there will be remarkable difference between Member States.

The criteria for a major road (more than 3 million vehicles per annum) does not imply that dwellings along roads with lower vehicles flows do not produce noise levels higher than 55 dB L_{DEN} at nearby dwellings; Especially where these nearby dwelling are close to the road and/or speed limits are relatively high

Raising awareness among policy makers and politicians on all levels about noise, its adverse effects and how to mitigate against these effects crucial to get commitment at local, regional, national and European level. In respect of this WGN commissioned the Radboud University (Nijmegen) to carry out a investigation, by way of a survey that was particularly focussed on Gaining Political Interest. The study shows that noise is not regarded as an urgent problem by policy makers and politicians.

Informing the public as meant in Article 9 of the END is a challenge for cities. Nevertheless, a lot of public meetings have been organized by the competent bodies but in general the interest and attendance has been very poor. Maps and Action Plans have been published on Internet but only a few people have shown interest in these. It was anticipated that the noise maps would be fully understood by the public, with them be able to distinguish the noise levels which were present in the city districts, streets and in their neighbourhood. As well as presenting the noise levels explanations were provided, for example, to identify where noise levels were very high, maybe too high, and that long lasting exposure to such levels could result in adverse health effects. Information about these health effects were also presented. In general the public also was told about the economical effects of noise and the costs to society. Furthermore, if already available the possible measures that could be taken to lower the noise were presented. However, in general all this has not resulted in demands for immediate action for the public. Of course some critical questions were raised but, it has to be said that the people in general do not to be upset, even when they see through the maps that high noise levels origin from roads, railways, airports and/or industrial sites are present local their living environment. A general consensus is that people understand the coloured noise maps with noise contours in a technical sense but do not realize what this means in the long term for their health and well being. Generally, members of WGN have found a disappointing lack of public reaction to the publication of noise maps and a lack of interest in the development of action plans to reduce noise where necessary. For quiet area protection more interest is observed.

4. CONCLUSIONS

It can be concluded that a high number of citizens in Europe are exposed to noise levels that are too high and which can cause irreversible health effects in humans. By means of the Noise Maps according to the END 2002/49/EC public, policy makers and politicians have a better insight in the magnitude of noise burden in Europe and European cities and that is a big profit. Although, it can be doubt if the public are aware of the presences of these Noise maps. Most of the Noise Action Plans that are established at a local level are a bit disappointing because

needed measures remain behind. Further, it can be concluded that the END could be improved on many points in order to gain a better European noise policy. Beside these points European Union has to strengthen their overall noise policy in order to lower the number of noise exposed people all over Europe and especially in cities drastically. Cities must take up their responsibilities as well and apply noise measures, protect vulnerable groups or objects and prevent noise as much as possible. They have to invest in noise measures coming years because noise is tangible in many situations. In this paper the following recommendations (limited) can be done and addressed to the EU:

- Improvements must be carried out to make the END more effective by setting limits or targets. Limits should be defined in a way that national limits will not drop off when they are already stricter than the EU limit. Within a period of 10 years the EU limit must be set stricter in order to get one set of harmonized limits in Europe. When introducing targets it can be similar to the carbon targets EU. Within the review as mentioned in article 11.1 this should be proposed to the EC and the EP.
- EU should strengthen their policies on noise, especially noise limits for vehicles, trains etc. Seen from the perspective of technology these sources can be reduced with many decibels. For existing equipment limits or technical or financial measures could be introduced as well in order to achieve a transition to quieter equipment by retrofitting it.
- EU has to update the Good Practice Guide on Noise Mapping and combine this with the Good Practice Guide on Harbour and Industry Noise (NOMEPorts) and give this new guide a formal status..
- EU has to intensify their communication policies towards cities in order to raise more awareness among the local authorities, the public and other stake-holders. A awareness campaign should be started.
- Somewhat strange in this paper: EU should provide BREFS on noise, in order to lower the noise originated by large companies
- Labelling of vehicles, tyres and other objects on energy and noise in a simple way must be implemented to make the public aware that quieter equipment exists and can be bought on the market or to find a house with a comfortable noise level.

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REFERENCES

1. Noise Questionnaire EUROCITIES 2008 Working Group Noise.
2. Miedema HM, Vos H. Exposure-response relationships for transportation noise. *J Acoust Soc Am*. 1998 Dec;104(6):3432–3445
3. Effects of Noise on Physical health risk in London by Bernard Berry, 2008
4. Night Noise Guidelines by Dr. R. Kim WHO Bonn, 2008
5. Website Noise in the City 2008, contribution Dr, R. Kim WHO

6. Transportation Noise and Cardiovascular Risk by Dr. Wolfgang Babisch, Federal Environmental Agency, Umwelt Bundes Amt (UBA), Januari 2006
7. Hypertension and exposure to noise near airports (HYENA): Study design and noise exposure assessment by L Jarup, ML Dudley, W Babisch, D Houthuijs, W Swart, G Pershagen, 2008
8. The association between noise exposure and blood pressure and ischemic heart disease: a meta-analysis by. van Kempen EEMM, Kruize H, Boshuizen HC, Ameling CB, Staatsen BAM; de Hollander AEM
9. The socio-economic impact of noise, a method for assessing Noise, T.Gjestland . 2007
10. Website SILENCE project, [www. silence-ip.org](http://www.silence-ip.org)
11. Website Q-city, www.qcity.org
12. Website SMILE project, www.smile-europe.org
13. Website PRONET project, www.proneteurope.eu
14. CALM network, CALM I and CALM II, website: www.calm-network.com
15. 'Good practice guide on strategic noise mapping' 13 January 2006.
16. Good Practice Guide on Port Area Noise Mapping and Management; NoMEPorts, 2008
17. Towards sound agenda setting by Drs. W. Witteveen and Dr. A.F.M.M. Souren, July 2009
(commissioned by EUROCITIES' Working Group Noise)
18. Draft Position Paper on the Evaluation of the END, 2009 by EUROCITIES' Working Group Noise
19. Directive 2002/49/EC of the European Parliament and of the Council of 25 June 2002 relating to the assessment and management of environmental noise
20. The Green Paper on Future Noise Policy (COM(96) 540) adopted and published by the Commission in November 1996
21. Directive 2008/1/EC of the European Parliament and of the Council of 15 January 2008 concerning integrated pollution prevention and control
22. Cities cannot solve their noise problems solitarily, H.Wolfert; DAGA 2009 Rotterdam
23. Integrated low-noise design in process industry by R. Baars; Kenniscentrum Geluid c/o Milieudienst Rijnmond. ISBN-13: 978-90—813225-1-5