



**Acoustics'08
Paris**
June 29-July 4, 2008

www.acoustics08-paris.org

euronoise

Action plans (PPBE) : experience of Municipal noise fighting plans

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The European Noise Directive (END) relating to the assessment and management of environmental noise requires the elaboration of action plans (Plans de Prévention du Bruit dans l'Environnement PPBE). However, these plans are limited to their concerned sources: trains, roads, planes and industrial plants.

On their own, some towns have developed action plans in order to manage any type of noise difficulty on their territory. We call such plans "Plans de Lutte Municipale contre le Bruit" (City Noise Action Plan).

Acoustique & Conseil have already implemented thirty PLMBs. This experience has led us to think that the strict application of PPBEs will in most cases not respond to all the expectations of the concerned populations, in terms of solutions to their daily noise problems.

It therefore seemed relevant for us to present a synthesis of the situations encountered during our works in order to enrich the approach of towns willing to enlarge their actions beyond those of the E.N.D.

Now that it is time to elaborate the PPBE, it seems relevant and appropriate to equally implement PLMBs in the same towns.

1 Introduction

1.1 END : CBS and PPBE

Since END has been translated into French regulation, Cities or EPCI (Etablissement Public de Coopération Interurbaine) are due to organise and manage those plans.

1.1.1 Local Action : Qualitative Diagnostic and PMLB

City noise action plans (Plans Municipaux de Lutte contre le Bruit PMLB) taking equally into account any noise disturbance, regardless of its nature, have been developed and implemented in around forty towns in France, with increasing success before the E.N.D was published. These plans are only connected to a political choice of each city.

2 Noise evaluation

2.1 END : Carte de Bruit Stratégique (Strategic Noise Maps) CBS

PPBE's are based on an evaluation of noise established via noise maps (CBS : cartes de bruit stratégiques). The implementation of these maps has been normalized and largely discussed for at least ten years. We shall not discuss these aspects here but will only remind the idea of the criteria chosen: LDEN is related to general noise nuisance whereas LNight is related to sleeping noise nuisance.

This noise annoyance approach is rich because of its normalized definition which introduces equity via an accepted reference between different situations. It can also underline populations that are submitted to noise disturbances but who are unable to express their discontent.

Nevertheless, this tool presents two major disadvantages. It is incomplete: we have never been able to describe noise annoyance with a single figure. Most painful situations are not visible through those maps. Even road noise is much more complex: what about car horns, trucks revving their engines loudly at five o'clock in the morning, rodeos, buses at stops with roaring motors...

2.2 Local Action : Qualitative Diagnostic

2.2.1 Methodology

In order to have an overview of the noise situation of a city, we must have other evaluation tools. We can multiply measurements but it will never be sufficient, we can organize population surveys but it's expensive. This is why we have developed another evaluation tool called qualitative diagnosis.

This is done by holding a meeting involving a maximum of persons relevant to the subject:

- Environmental city service
- Health city service
- Urbanism city service
- Police (city and national)
- Main infrastructure managers (roads, trains, planes...)
- Main social housing managers
- Environmental associations
- Neighborhood associations
- Justice

This group is called "Comité de Pilotage" (Pilot committee)

The idea is to help this group to express all acoustically painful situations. To do so we present a list of noise situations and ask for each situation if it is actually encountered on the concerned territory.

The main list is:

- TRANSPORT AND TRAFFIC
- ECONOMIC LIFE
- COLLECTIVE LIFE
 - OUTDOOR
 - INDOOR

NEIGHBOURHOOD NOISE

3 Qualitative diagnostic experience

Acoustique & Conseil has helped 30 cities organize and launch their own PMLB, between 1995 and 2006. We have analyzed 24 of those to have a general overview of the qualitative diagnosis. To quantify those qualitative aspects, we use occurrences which are just the number of times an idea in each category has been expressed. It is therefore not related to annoyance level or even to the population concerned, but roughly to city preoccupation.

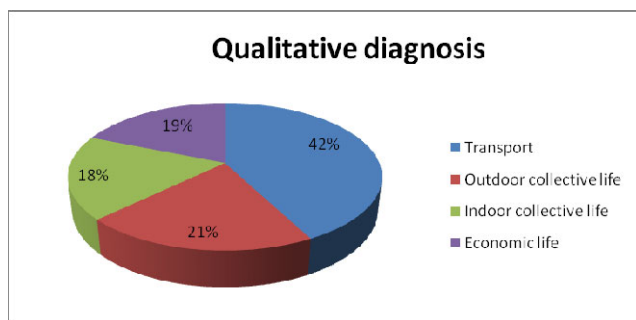
Categories regroup more or less topics and then contain more or less occurrences.

We have then analyzed categories of three different levels: the main level corresponds to the main list previously presented, the intermediate level is an analysis of each domain, and we will also present a detailed level of analysis which seems surprising and interesting.

We will present results either as a percentage of the cities considered (24) or as a percentage of occurrences defined as a subject precisely named. Often, both “% of cities concerned” and “% of occurrences” are related and we’ll present only one of them.

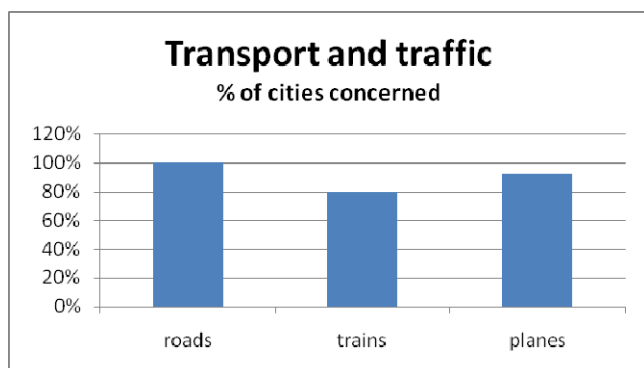
3.1 Main level

At the main level, all cities are concerned. The occurrences are mostly equal, except for transport which is more often cited:

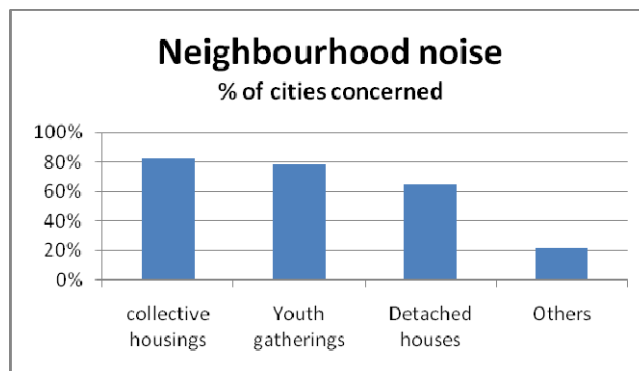


3.2 Intermediate level

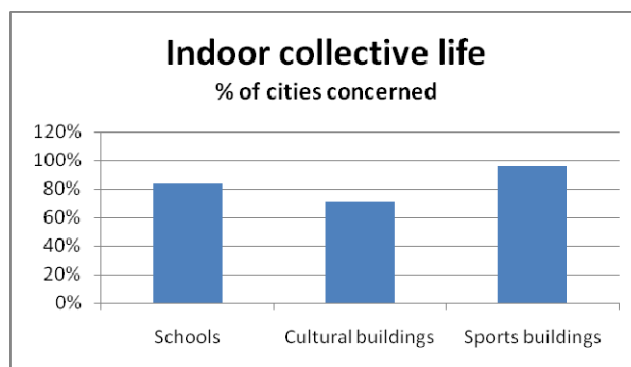
Road traffic noise is a problem for all cities analyzed:



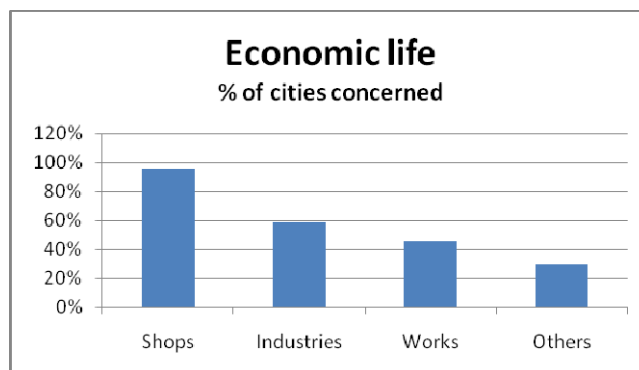
Youth gatherings were not previously detected as a category, but they appeared as important:



Many collective buildings have noise problems:

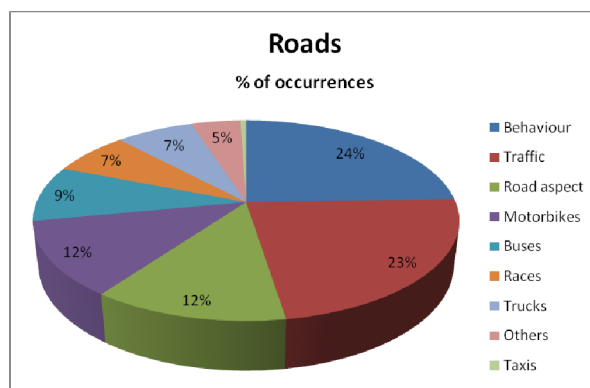


Many complaints concern shops or industries.

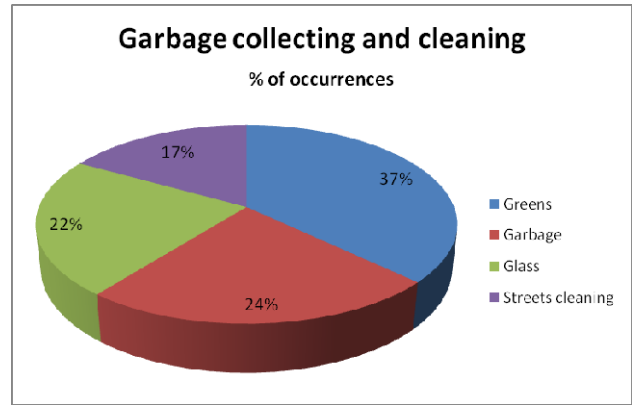
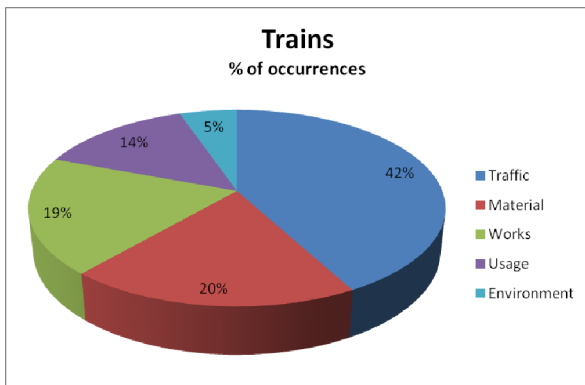


3.3 Detailed level

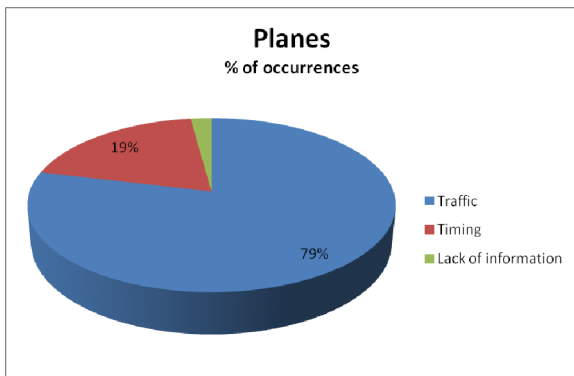
Behaviour has more often been mentioned as a cause of noise nuisance cause than traffic:



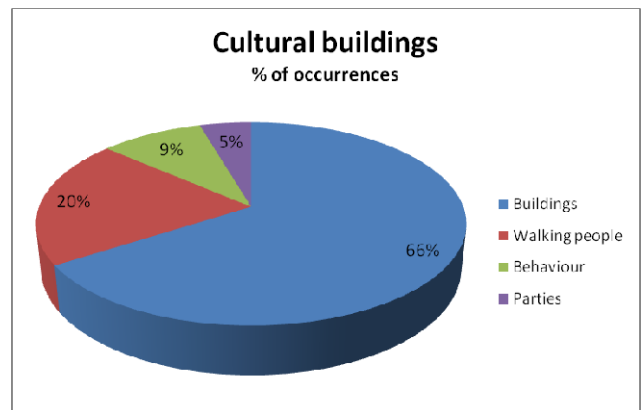
For trains, material and works are often mentioned:



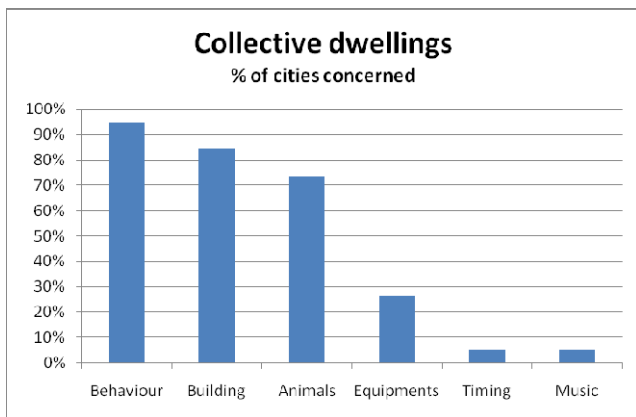
For planes, timing seems important:



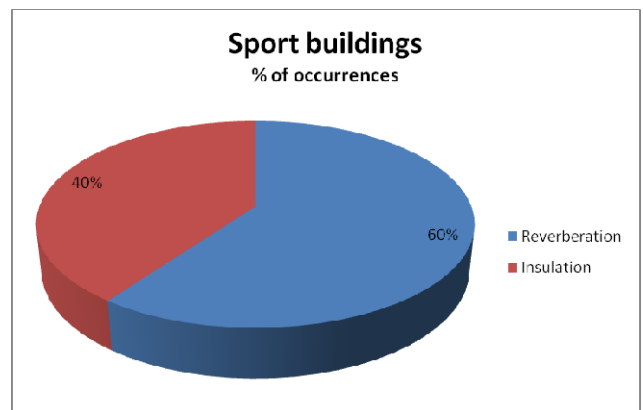
People talking and walking at night outside cultural buildings are often annoying. On the contrary, collective parties are often well accepted:



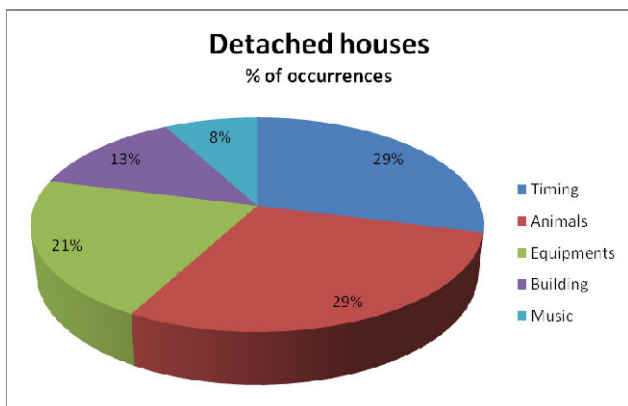
Working on behaviour is obviously an interesting idea for collective dwellings:



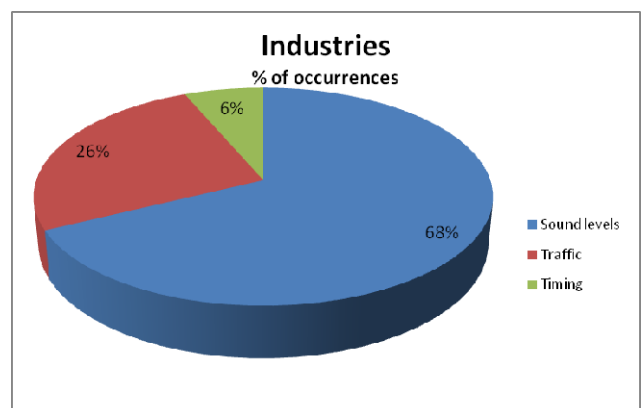
Schools and sport buildings are still confronted to excessive reverberation and associated noise.



Animals are very noisy in detached houses:

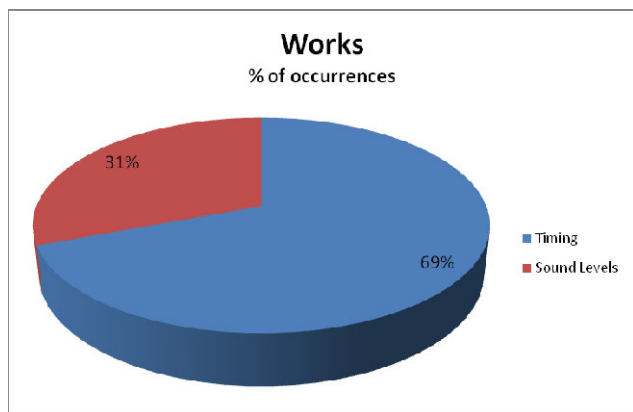


Traffic noise around industries is quite frequent:



Any collecting is noisy :

Works are quite accepted as soon as timing is correct, which is not so frequent:



4 Action plans

4.1 END : PPBE

PPBE is based mainly on the interpretation of CBS's. It is largely discussed on other papers and will not be developed here. We can only assume it is really difficult to develop such an action plan when the area concerned is a city, where main roads and railways are the responsibility of other decisionary entities.

4.2 Local Action : PMLB

PMLB is well adapted to small cities because some actions can be rapidly implemented, and are well adapted to local questions.

4.2.1 Methodology

PMLB is discussed with the "Comité de Pilotage". In practice, Acoustique & Conseil present actions adapted with qualitative diagnostic to the Comité de Pilotage and discuss each action with it. PMLB is organized according to the following list:

TECHNICAL ACTIONS

Prevention

Correction

MATERIAL AND HUMANE MEANS

ORGANISATION

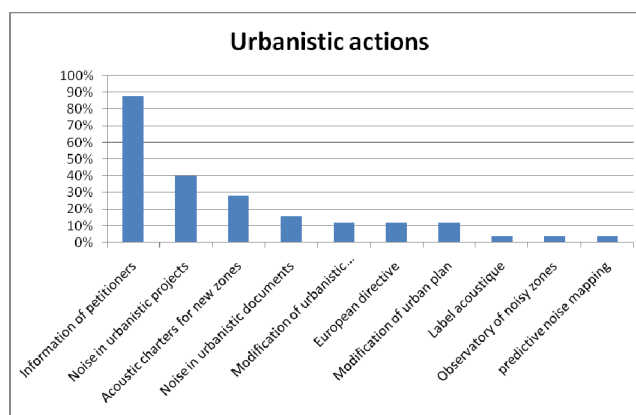
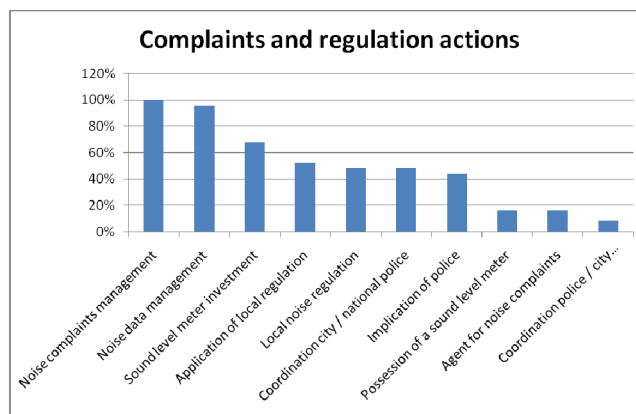
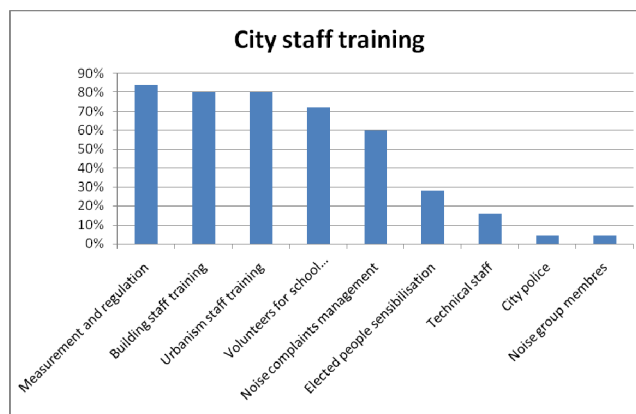
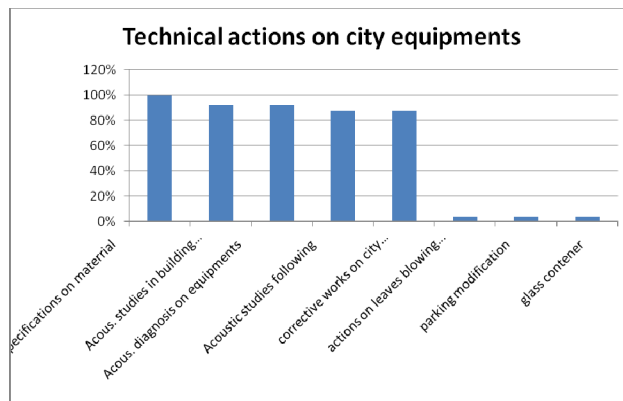
SENSIBILISATION AND COMMUNICATION

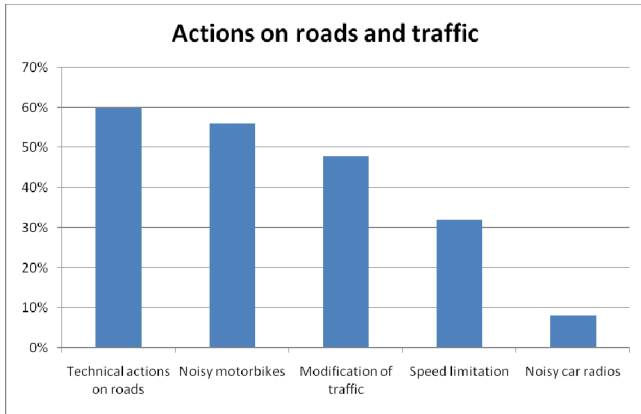
Actions that are already implemented are naturally integrated in this global action plan.

4.2.2 Experience

We have analyzed the same 24 cities as previously, but have only analyzed the "% of cities concerned" criterium. We will just show hereafter some aspects of the analysis.

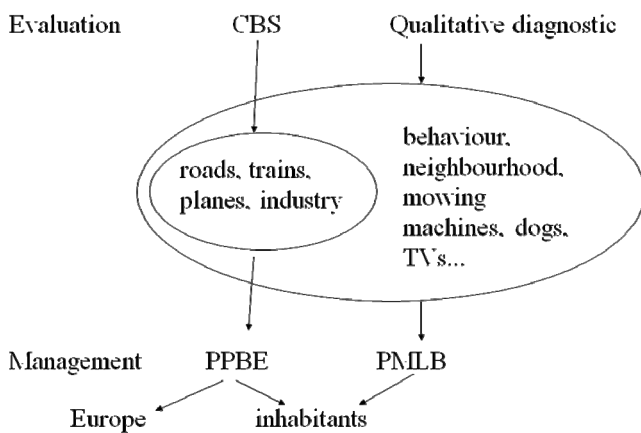
The following charts show the diversity of action plans decided by different towns.



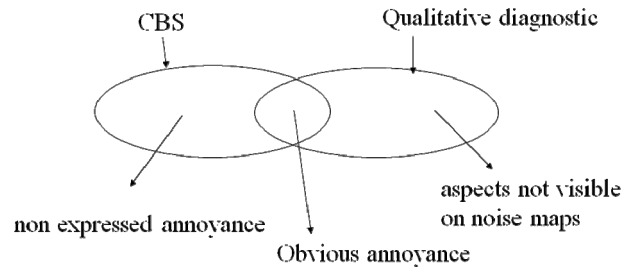


5 Complementarity

We have then two diagnostic tools and two action plans aiming at different noise situations:



The two diagnostic tools CBS and Qualitative diagnostic show different aspects of noise annoyance, which are unique and relevant. Both seem necessary:



6 Conclusion

French cities are now getting organized to implement PPBE's as required by END. They are confronted to two main difficulties: they don't manage big transport infrastructures and END does not answer the difficulties of everyday citizen.

In order to actually improve the situation for people, it is relevant to adapt action to local annoyance. For this purpose, the PMLB will be complementary to the PPBE. Our experience on such plans show that peoples' preoccupations are extremely variable depending on the nature of cities and that it will be interesting to act on those particularities to enrich PPBE based only on CBS.

Acknowledgments

I'd to thank my acoustic consultant colleagues of Acoustique & Conseil with whom I work every day. They are deeply involved in this subject and we continuously share our experience with great pleasure. I will not forget to name André CROS who has developed this concept of PMLB for fifteen years and was often alone to convince French towns of its pertinence. It's now becoming more and more obvious it was a good idea. Thank you also to Satia Cautin who helped analyze qualitative diagnoses and action plans.

References

Collectif, "Guide pour l'élaboration des Plans de Prévention du Bruit dans l'Environnement", ADEME / MEDAD (2008)