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LitusGo Manual

Module 13

Community Annoyance 1:

Noise Pollution

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Preface to the LitusGo Education Manual

The LitusGo Manual is part of the LitusGo educational package which is included in the LitusGo portal: www.litusgo.eu. LitusGo aims at the training and capacity building of Local Authorities and local stakeholders in Integrated Coastal Zone Management issues and the reaction to the impacts of climate change.

This Manual consists of 20 autonomous, self-contained and inter-related modules. The modules are available in four languages, Greek, English, Maltese and Turkish and in three different forms: the dedicated wiki application in the LitusGo portal, the dvd and the hard copy version. This hard copy version of the LitusGo Manual consists of 20 self-contained booklets, one for each module, kept in a hard collective case.

List of modules of the LitusGo Educational Manual

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Credits

The LitusGo Education Manual has been developed by the LitusGo Educational Manual Working group:
Modules 1, 2, 6, 7, 8, 9, 12, 13, 14, 16, 17, 18, 19 have been prepared by the scientific team of the beneficiary/coordinators ISOTECH Ltd. Major authors: Michael I. Loizides, Chemical/Environmental Engineer and Xenia I. Loizidou, Civil/Coastal Engineer. Constantinos Georgiades (MSc in ICZM) is responsible for the overall editing. The hard copy of the educational Manual is designed by Anastasia Georgiou.

Modules 3, 4, 5, 10, 11, 15, 20 have been prepared by the scientific team of the Sustainable Aegean Programme of ELLINIKI ETAIRIA - Society for the Environment and Cultural Heritage. Major authors: Georgia Kikou, Geographer, MSc Environment (Manager of the Sustainable Aegean Programme), Alexandros Moutaftsis, Economist, MSc Environment, Leonidas Economakis, Political Sciences, MA International Development.

Dr Alan Pickaver on behalf of partner The Coastal & Marine Union (EUCC) was responsible for the quality control of the educational material.

LitusGo partnership:

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Greece:

ELLINIKI ETAIRIA - Society for the Environment and Cultural Heritage www.ellet.gr **/ Sustainable Aegean Programme**, www.egaio.gr

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Malta:

Municipality of Kirkop www.kirkop.gov.mt

The Netherlands:

EUCC – The Coastal & Marine Union www.eucc.net

Module 13
Community annoyance:
Noise Pollution

1| Theoretical background

The term community annoyance is defined as the sum of all the parameters that are negatively affecting the life quality of a community's residents by interfering in the microclimate of their living area. It includes everything that can be unpleasant to the human senses, mainly noise, odour, light, thermo liquid, electromagnetic, aesthetic and air pollution. It does not include the workplace, provided that the working noise issues are covered by other specific legislation [1, 3]. The parameters of community annoyance do not necessarily have a direct aggravating effect on human health, they can just be disturbing.

In this module, the focus is on the problem of noise. The EU has tried to institutionalize a recent Directive on Environmental Noise [7]. For those involved professionally in this matter, the Directive could be considered as a first step in trying to support the Member States in taking strategic decisions primarily on improving traffic noise. It is not though able to help resolve local disputes from other sources of noise emissions, which are the most common cases of community annoyance (music from entertainment venues, noise from air conditioners, from industries, etc.).

As a result, the cases of noise pollution in most EU Member States have to be treated either at national or even municipal level, where such complaints are normally examined by the local authorities. Specifically, most Member States' legislation, in the Municipalities Act, includes provisions for possible intervention by both the municipality and the police, in cases where residents report discomfort from activities by third parties. Usually neither the parameters nor the methods of measurement and response are clearly defined. These remain at the discretion of each Local Authority and/or Member State to propose and impose. A few cases have fully used all the legal means of their countries, and finally ended in the European Court of Human Rights, where the direct connection of community annoyance with the violation of a number of provisions of the Charter of Human Rights has been recognized [6].

The maximum sound limit beyond which human health is affected:

For areas with increased traffic, the World Health Organisation (WHO) has set the maximum limit for sound to be at 55 dB (Leq), above which there are negative effects to the human health for a 24hr exposure [8].

Limits of noise:

In most European countries, the limits of noise in residential areas with increased traffic have been divided into three categories:

A) Limit of urban development project
Day: 55 dB Night: 45 dB

B) Standby limit
Day: 60 dB Night: 50 dB

C) Alert limit
Day: 70 dB Night: 60 dB

2| Objective

As the density of population increases, particularly in big cities, the degree of freedom of each resident (so that a resident does not interfere with the private space of his neighbour) is reduced, and the conflicts regarding community annoyance become greater.

There is a significant gap in the EU on the issue of noise pollution: the Directive on Environmental Noise does not take into consideration the local particularities and it does not give a solution to the most frequent problems of noise, other than vehicles, although this is an issue that affects the majority of European citizens. It is left to the discretion of each local authority to handle problems that arise. The basic disadvantage of this approach is that in most cases the Local Authority does not have the infrastructure in specialised manpower and/or the necessary training to handle them, without the support/guidance from the central state.

LitusGo with this module is making an effort to support the local authorities with their preparations to be able to face such problems of noise pollution.

3| Problem

For each person, his/her residence is a private space that should at least provide him/her with the possibility of relaxation. Any external intervention to this important microclimate and the human senses, can disturb the peace of mind and therefore the basic use of space for rest and relaxation. For example, which is the appropriate intensity that entertainment venues should have their music so that it does not disturb the neighbours? Is noise from the neighbour's air conditioner compressor actually distrurbing the childrens while they are reading or sleeping in their bedroom? Is the noise that comes into my house from the nearby industry exceeding my tolerable limit? What are the procedures to effectively deal with such problems? What methodologies and what manpower and instrumentation are needed to adequately document a case of a noise pollution?

The most common types of complaints about sound community annoyance concern people who are annoyed from an external source of noise on a regular basis. The most usual is music from entertainment venue centres, noise and vibrations from compressors of big air-conditioners, noise from outdoor restaurants or bars, operation of industrial machinery in residential areas, etc.

In Cyprus, an outdoor concert that is announced and organized by the appropriate municipality within the frame of an annual cultural week, can hardly be denounced as annoying and the police cannot interfere. However, this excludes those places that frequently

accommodate concerts or other potentially annoying activities. In such cases, the neighbouring region could make complaints at the appropriate municipality for corrective actions. On the same basis, events such as weddings, church ceremonies and other activities that constitute part of the culture of people, can be tolerated by the local community therefore would not fall under the procedures for establishment of community annoyance.

In northern EU countries, the above mentioned activities do not constitute an exception in community annoyance.

An example from Holland (which could take place anywhere in the world):

In a town in Holland the chimes of the clock, which rings every 15 minutes throughout the night, were considered noisy and a disturbance for 50% of the locals but 50% actually said it was not an annoyance and was a town 'tradition' and wanted the chimes to continue to ring. The case went to court and for two years the chimes did not ring any more from 23.00 – 06.00. Although legal limits for noise exist, in this case the Council had – decades ago – applied for an exception which had been granted so they were not technically in breach of the law.

An attempt has been made below to provide examples of successful interventions.

Education/Training of Local Authorities and local communities:

The first step towards solving the problem of noise pollution, is the briefing of Local Authorities on the fact that noise pollution can have a harmful impact on the citizens. Noise measurements can be scientifically established and technically raised. A host of national legislation and international standards, such as ISO1996, is internationally available, under which each local authority should be in a position to approach this subject to a satisfactory degree.

Involvement of citizens/stakeholders:

It is important to have a complaint by a citizen in order for a case of a community annoyance to proceed for investigation by the Authorities. This requires that the citizens are aware of their rights and of the harm that noise pollution can cause to their health. Local Authorities have an important role to play: they must organise and support well structured information and awareness raising campaigns among the citizens and promote public participation in the several levels of the effort to combat noise pollution in urban areas.

Method of approaching the problem of noise pollution:

1. The first step that any Local Authority should take is to identify the paragraphs regarding annoyance in their national legislation (for Cyprus this is the Municipalities Law). In many national laws (like that of Cyprus), the specific methodology for identifying the degree

of harmful effect has not been defined. In such a case, a method should be selected from existing national or international standards (a typical example is ISO 1996). Here follows a short description of the most popular methods:

- One of the most common approaches that could be applied to all community annoyance parameters, which are to be examined later, is the comparative method. One example is the state-level-intensity of noise (a parameter which potentially can be an annoyance) in a house-receiver both prior and after the study of external intervention. The term "external intervention" can be for example the noise coming from the music of an open bar. This noise "intervenes" in the area's state of noise as an "added noise annoyance". According to the comparative method, the state of noise is measured without and then with the noise of the music coming from the open bar. With this comparative method we can determine the net contribution-intervention of the music of the open bar to the level of noise in the area. The net contribution of the exogenous source (the music of the open bar in our example), can be classified as an annoyance problem or not, by using a level database (usually international).
- The second method of approaching community annoyance is much simpler and more common than the first one. It defines a specific level-limit for each parameter which is tolerable and not annoying for the average resident. Beyond this limit any exogenous source of emission is judged as annoying. What this method does not take into consideration is the relative way in which the human organism/sense considers each noise and

classifies it as annoying or not. For example, in a bedroom of an apartment that is located near a road with an average hourly noise level of 60dB (A), the tenants will not even notice the noise from the compressor of a nearby air-conditioner which emits sounds of 56dB (A). On the contrary, in a quiet region where the corresponding General Level of Noise that the resident is used to, does not exceed 40dB (A), the installation of an air-conditioning system of 56dB (A), as in the previous case, would add 16dB (A) (56-40 = 16dB difference based on the comparative method) on the acoustic microclimate of the house, creating conditions of high annoyance and therefore intense complaints. Using the method for setting a maximum limit, that usually for the daytime in most countries ranges from 55 to 60dB (A), then the sound of the air-conditioner would fall within these limits. This would mean some residents would have to tolerate a stronger intervention of this source of noise in their houses.

2. The second step for a Local Authority is to cooperate with the relevant national authority and the police, and form a group that will investigate locally the cases of noise annoyance, with the technical support that is needed, i.e. the expert who can provide the noise measurements and the suggestions for the solution of each claim/case.

3. The third step is to meet with the two parties (the one who filed the complaint and the one who produces the noise) and based on the expert's study, try to find and implement solutions, without going to court.

The good example of Cyprus:

In Cyprus the estimation of noise pollution in residential areas is done by the implementation of the comparative method: the measured value of noise compared with the overall noise level of the region. Despite the fact that there is not a particular national or European law and that the municipalities only follow the proposed 3-step approach, as described above, more than 90% of urban noise annoyance cases, that have been treated by the author of this module in Cyprus during the last 15 years (more than 600 claims) had a positive outcome without going to court. This demonstrates the effectiveness of the process that has been used for at least 15 years within 10 municipalities in Cyprus.

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