

# **GIOCONDA: BUILDING THE UNAVOIDABLE DIALOGUE**

## **AN EVIDENCE INFORMED TOOL TO SUPPORT DECISIONS ON ENVIRONMENT AND HEALTH**

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### *What is GIOCONDA*

The LIFE + GIOCONDA project (i GIOvani CONtano nelle Decisioni su salute e Ambiente – the young count in the decisions on environment and health) provides young citizens and local administrations with a tool for dialogue on health and environmental issues. The dialogue is built through the active involvement of these actors, in a process of participation and education in decision-making on the environment and health.

This participatory process was set up in secondary schools, within five areas in Italy with different socio-economic and environmental pressures: Ravenna and Ferrara, which are small towns with significant industrial and agricultural activities; the Lower Arno Valley (San Miniato), an area with small tanneries and agriculture; Naples, a metropolis affected by waste management problems, air pollution and high noise levels; Taranto, town that is home to the largest steel industry in Europe.

Protagonists were 800 young people aged between 11 and 17, who were involved in air quality and noise monitoring, inside and outside of the schools. These school goers observed how the instruments worked, discussed the hazards and risks with experts, and assessed their own perception of risks through a questionnaire. Finally, they compared their risk perception with the monitoring results and then reflected on how to live in a healthier, cleaner environment.

Meanwhile, the local administrators in the areas have been informed and engaged in meeting the young citizens and listening to their recommendation.

The dialogue demonstrated to be successful: the chance to discuss the official and reliable data, collected by the local agencies for the environment (ARPA), and to listen to the fresh voices of the youngsters was highly effective in promoting scientific citizenship.

### *The scientific evidences at stake: monitoring of pollutants vs perception of risk?*

GIOCONDA focused on air pollution and noise since the negative influence on health of these factors has been established and they are both recognised as modifiable environmental factors by the WHO [1]

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[2]. According to the EU Noise Directive, schools are “sensitive receptors” and should be located in quiet areas.

Household and ambient air pollution causes an increase in respiratory infections, and it is recognised by the WHO as one of the main contributors of the global burden of diseases. Lower respiratory infections, including pneumonia, bronchitis and bronchiolitis, are the most significant cause of mortality in children.

Noise is one of the risk factors influencing mental, behavioural and neurological disorders. Cognitive impairment in school-age children represents a serious health issue, with language skills, reading comprehension, memory and attention being particularly affected; teachers can suffer from stress or voice problems due to the noise coming from outside or inside the classrooms.

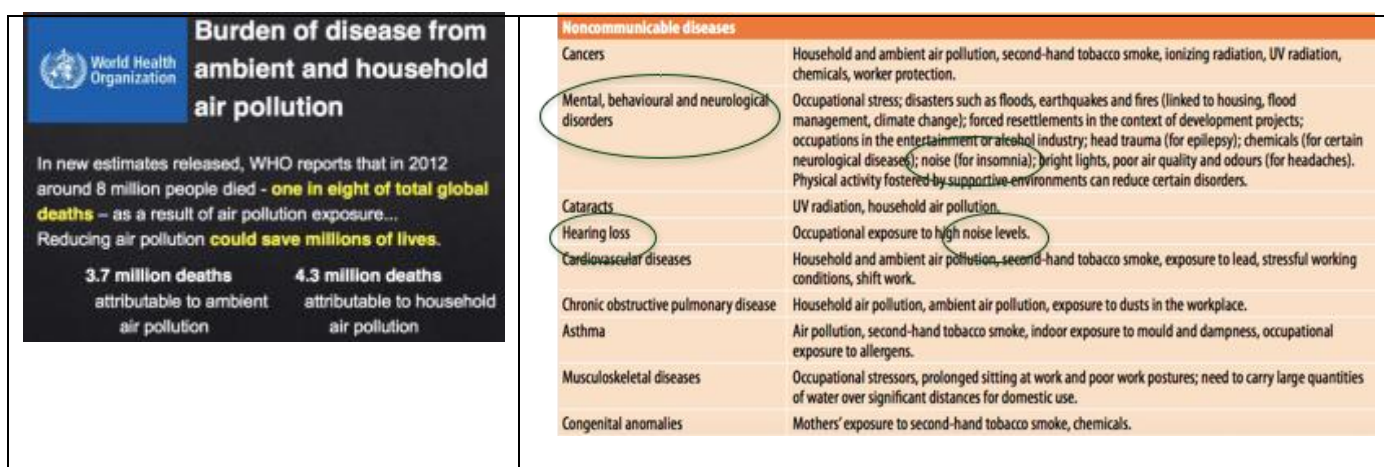


Fig. 1: Scientific problems at stake

The results of the air pollutants monitoring (PM10, PM2,5, NO2, bitrex), inside and outside of the school buildings (aggregated into annual and seasonal means) were under the limits set by the Italian regulation. Nevertheless, the results were generally above the thresholds for health-harmful pollution levels proposed by the “WHO Air quality guidelines”.

As for noise measurements, a global indicator was identified for an overall evaluation of the noise situation in each of the monitored classrooms (Global Noise Score). The results were very poor in the eight schools monitored: around 75% of the classrooms were in the lower levels of the ranking, i.e. “very poor” or “poor”, mainly due to structural problems of the school buildings.

The perception of risk related to the air quality was consistent with the levels of pollution monitored; particularly in schools close to congested streets or located in city centres, pupils’ perception of risk was higher than in the other locations investigated.

In industrial areas the risk was perceived as high, almost only attributed to the nearby industries and to a lesser extent to vehicle emissions, which are actually a major cause of pollution.

A significant gap between risk perception and noise monitoring was observed. The answer to questions relating to “declared knowledge on risks related to noise” and “concerns about your health” showed scarce awareness.

Novelty of GIOCONDA was to demonstrate the efficiency and efficacy of including these findings in a



*participatory process*, where pupils formulated their recommendation to the local policy makers basing on *evidences*.

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**Fig. 2:** GIOCONDA's Concept

#### *Methods of engagement: participating the data*

The young public, lead by their teachers, has been involved in a five-steps activity based on the techniques of the participatory research [3]:

1 – Mental map around the word “risk” [4]. A mental map is built on the clip board, using post-its. Every pupil was free to write one or two words and the educator is in charge of proposing a grouping activity afterwards. Three main areas were deepened: places where they occur, causes of the risks perceived, solutions. This general maps allows to isolate the topics related to environment and health to be discussed later. A questionnaire on the risk perception on environment and health was submitted using the project's platform ([www.gioconda.ifc.cnr.it](http://www.gioconda.ifc.cnr.it))



2 - A meeting with experts of air and noise monitoring and epidemiology was organized in every school. The teachers received materials and information on the local state of the environment to use in the classrooms, besides the ones prepared by the GIOCONDA's team.

3 – The results of the questionnaires and the measures from the monitoring were discussed and contributed to build the pupil's "book of the challenges on environment and health": every youngster received a small book with the basic information on their right to participate and about the effect of air pollutants and noise on the human health, basing on the characteristics of her/his city/area. The pupils were invited to copy and paste the data coming from the questionnaires and the ad hoc monitoring of air and noise in their own copy of the book.

4 – using participatory techniques, the pupils in the classrooms were divided into 4-5 groups. Each of them discussed a different topic, focusing on places (e.g. presence of industries or incinerators in town, school close to busy streets), causes (people habits, mobility), effects (health, quality of life). They had to list recommendations for their local decision makers to improve the state of the local environment and – as a consequence – of the health of its inhabitants, based on the data collected along the whole activity. As well, they had to list actions that they commit to undertake (e.g. biking and walking). Some of the pupils collected pictures and video-interviews during these participatory meetings to be used for further presentations.

5 – a final event, where the teachers invite representatives of the local health/environment agencies and of the municipality is organized and recommendations are presented by the pupils via posters, ppt presentations, mini-videos. A reply by the adults was requested.

An in-depth evaluation activity of the all process, in the 8 GIOCONDA's schools was carried out and gave the possibility to adjust its possible weaknesses. After the evaluation, the GIOCONDA's team created a toolkit that the teachers can download and apply autonomously (available from autumn 2016 on the project website).

Here the steps and the methods used for the process' evaluation is summarized:



Project phase	Objectives	Qualitative Methods	Quantitative Methods
<b>At the beginning: Understanding the areas and ex-ante evaluation</b>	<ul style="list-style-type: none"> <li>To understand from the future participants <b>knowledges, ideas, opinions</b> around the topics of health, environment and participation in their city</li> <li>To <b>analyse the local policies</b> on health, environment and participation</li> <li>To study the <b>socio-economic and citizens' health characterization</b></li> </ul>	<ul style="list-style-type: none"> <li><b>Semi-structured interviews with the local stakeholders in the 4 areas (Municipality counsellors, environmental educators, CSO, teachers, students)</b></li> <li>Document analysis on local regulations, programmatic documents and projects. Key-words: environmental protection, health protection, participation, policies for schools and the young</li> <li>Document analysis to collect data on the population, economic and health status of the areas involved</li> </ul>	-
<b>During the project:</b>	To understand the idea of risk in the core-target (11-17)	<b>Brainstorming</b> in the classrooms (27 classes involved, 20 conceptual maps created)	-
<b>Using the data to communicate and act on the local policies</b>	<ul style="list-style-type: none"> <li>To <b>measure the youngsters' risk perception</b> about air and noise pollution.</li> <li>To <b>compare the results of the questionnaires with the local measures</b> of air and noise pollution (ad hoc measurements inside and outside the schools)</li> <li>To <b>use the data collected</b> to co-produce recommendations on how to improve the relationship between environment and health at the school and local level</li> </ul>	-	<b>Questionnaire</b> (psychometric model)
<b>After the activities: ex-post evaluation</b>	<ul style="list-style-type: none"> <li>To understand what worked out and what didn't during the school activities and in the dialogue with the local administrators.</li> <li>To measure the outputs</li> </ul>	<b>Semi-structured interviews</b> with students, teachers, school directors and administrators	Facebook page friends Website visits (Google analytics) N. of participants at the local events N. of spin-off activities (further events, presentations, networking effort, conferences)
<b>Before releasing the final product:</b>  Test of GIOCONDA's Platform	To test <b>GIOCONDA's Platform</b> the final product that will allow the users to use methods and tools after the Eu co-financing	<b>Semi-structured interviews</b> with teachers, administrators <b>Participant observation</b> in the classrooms and observation grid to evaluate the tool with the administrators	-

**Tab. 1:** Topics, methods and means for *GIOCONDA for school's* evaluation

### *Recommendations and impacts*

With the aim to help decision makers to develop evidence-based policies to promote (when needed) measures against the risks to the environment and human health, those recommendations were finally presented in public events. The local administrators had the chance to reply and give their feedbacks *live*. Key words were:

**Data** – The necessity to make the data on air and noise pollution not just transparent but also *well communicated* to the citizens emerged as a priority all along the GIOCONDA's schools. "Don't keep data on environment and health hidden" was one of the motto resulting from the public consultations.

**Mobility** – concrete actions were suggested to the administrators, as empowering the local public transports in identified areas and the bike lanes linking the city centres to the outskirts; this was also assumed as a field where young citizens can commit themselves for a real change, modifying their habits and that of their families. As a concrete result in Ravenna and in Ferrara (where the GIOCONDA process was recently tested), the recommendations by the children were formally assumed in the planning of the cities' new mobility. In Naples, the mobility resulted as a field where to work "for a city, not just clean from the waste, but also from polluting and noisy traffic".

**Participation** – when talking about how to avoid air and noise pollution, beside raising topics as sustainable transports, energy production, introduction of new technologies to mitigate the effects of polluting industries, or the necessity to consume less, a leit motiv recurs: the necessity to "unite people to save the environment". Besides basing on reliable and well communicated data, people have to be encouraged to locally meet and to talk to their administrators, regularly. This is the mean to reach the so-called *scientific citizenship*. For this purpose, in San Miniato, as well as in Taranto, the request of a *Children Town Council* was proposed and appreciated by the decision makers.

### *Conclusions*

To communicate about environment and health is a big challenge. The scientific uncertainty linked to the epidemiological findings makes of it a complex and highly discussed matter.

However, to raise the awareness of the publics on this topic is of pivotal importance if we want to apply the concept of *scientific citizenship*. For this reason, we started from the young target, assuming that they have the right to discuss on and be listen about the issue of pollutants and health in their schools and in the cities where they live.

Interpreting our story through the discourse analysis basic tools, it is built on three main actors: teachers, pupils and local administrators. The dialogue we fostered was defined "unavoidable", since, practically speaking, once a teacher actively enters the process, the participation of the school goes demonstrated to be very successful. From the local administrators' side, the advantage to open a dialogue with them is unquestionable.

The story takes place in the schools and the neighbouring zones/cities. It gave to possibility to talk about tangible issues, grounding on the everyday experience of the participants. Time is the present.

The values that motivate actions to go on are that of: collecting reliable data, discussing them

together, confronting each other on this base with the decision makers.

To phrase it with the words of the political scientists, this is an attempt to overcome the “symbolic policies” [5] and try to find solutions together, not just based on theoretical assumptions (even if above all the youngest of the participants tend to express their view on the environment calling faraway examples as the climate change in the poles), but on measures *locally-and-evidence-informed*.

## References

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