

Participatory assessment of the health impacts in areas with potentially polluting waste treatment plants

Drawbacks and specificities in designing the epidemiological study of the HIA21 project

Authors: Nunzia Linzalone, Fabrizio Minichilli, Michele Santoro & Fabrizio Bianchi

Affiliation: Institute of Clinical Physiology, National Council of Research, Pisa Italy



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INTRODUCTION

In the HIA21 project, the adoption of a participatory and transparent approach was the methodological framework to assess the impacts of two different treatment options, as well the overall waste cycle management in the Tuscany and Abruzzi regions. In Arezzo, the waste cycle is centered on the existing incinerator of San Zeno, where currently a decision of almost doubling the plant capacity has to be taken. The area also suffers from pressures by several industrial activities. In Lanciano the waste cycle management has to be re-thought providing an alternative to the landfill, actually the biggest area to dispose the waste in the region, which at the moment has been completely filled. The area around the Cerratina dumping site exerts pressures in the surroundings due to the raising flow of waste dumped more than the volume admitted.



Arezzo (data referred to 2010)
 ✓ 210.440 t of MSW
 ✓ 349.651 inhabitants
 ✓ 64.284 t separate collection
 ✓ 30.5 % (36.6 % Toscana)
 ✓ 2012 65% (target)

Lanciano (data referred to 2010)
 ✓ 189.543 t of MSW
 ✓ 397.123 inhabitants
 ✓ 57.913 t separate collection
 ✓ 30.6 % (28.1 % Abruzzo)
 ✓ 2012 65 % (target)



Participatory assessment of the health, environmental and socio-economic impacts resulting from urban waste treatment

GENERAL BACKGROUND

The HIA21 project addresses the impacts of two different waste management systems on the environment, the population health and the socioeconomic condition, as well the local policy planning. The project has to be carried out over three years, from 2011 to 2014, by the Institute of Clinical Physiology of the National Council of Research together with the Consorzio Mario Negri Sud and six more local partners in two Italian regions.

Two main issues represent the project background. The first one is the need to face the increase of waste generated within the European Community, as well the urgency to manage the waste cycle as to reduce the impacts and the resources consumption, as stated in "Environment and energy" by the European Union in 2010.

The second one is the need to include a wide participation of actors as a pre-requisite in the planning of a waste management system, including stakeholders and communities concerned, as stated in "Preparing a Waste Management Plan" by the EC-DG Environment in 2012. Moreover, a consultation phase should be included during the various stages of the planning process with the aim of allowing the public authority to take informed decisions, as stated in the European Community "Waste Framework Directive 2008/98/EC".

AIM

To provide a tool for the waste cycle management which is innovative and integrates the democratic participation of the communities in the local strategic planning.

METHODS

The participatory methodologies developed within the Local Agenda 21 programme have been investigated and opportunely integrated within the project constraints of time and demonstration aims. A local assessment of impacts has to be done for the incinerating waste treatment plant and for the landfilling of waste to determine the overall impact of the two waste management systems. Within the Health Impact Assessment framework the final recommendations for the strategic planning of the local waste management cycle will be drafted.

THE PARTICIPATORY APPROACH IN THE ASSESSMENT OF IMPACTS

A workshop with the relevant stakeholders was held to mainstream a decisional process aimed at defining the study domain, the health indicators, the pollutant tracers and the analytical procedure for the data analysis in the study context, thus providing a general protocol for the epidemiological study on the population residing nearby the treatment plants.

Furthermore, to enrich the impacts and the process evaluation, the interim results of the assessment will be shared and reviewed by the focus groups activated within the local community.

DEFINING THE HEALTH PROTOCOL IN THE AREA

The planning of the health study involved the relevant parties and the experts to discuss on:

1. Epidemiological approach: finalization of the study design;
2. Environmental and health data background: holders and providers;
3. Building the inventory of personal, environmental and health data: needs, constraints and quality evaluation;
4. Definition of the community participation: opportunities within the project and the policy context.

Some drawbacks were obstacles to follow the provisional plan and timelines.

At first, the scoped area was settled larger than foreseen to include other polluting sources causing local health concern in the area. In turn, the mapping of the pollutants fallout was needed for each of the sources included.

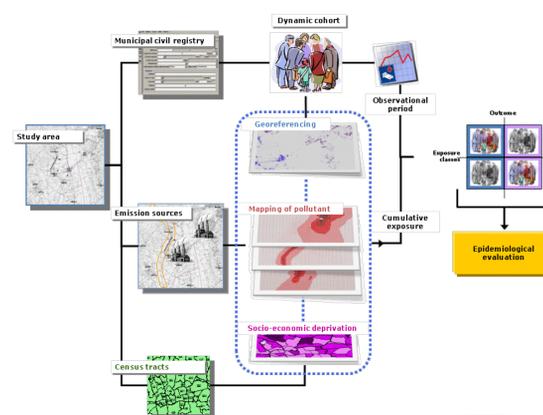
At second, the building of the databases for the environmental, health and demographic profile of the area required a major effort than planned. In particular, harmonizing the environmental archives of data sets, completing the demographic profile for the cohort under study and formalizing the access to personal health data were actions not included in the approved plan.

MID-TERM PROJECT CONCLUSIONS

The consultative methods carried out within the HIA21 project includes a stakeholder consultation in the planning of the health study design and the assistance by a focus group in the assessment of the wider impacts of the waste treatment plant. This approach facilitated the building of trust among relevant parties and the processing of the evaluation methods. A network of collaborations was also built to collect new data and share the project results with the community and the municipality administration. The next phase of quantification of the health effects could support the programming of a sustainable waste cycle management in the local context and also a deeper analysis of impacts from different waste management scenarios.

Synthetic scheme of the participants and their specific contribution to the protocol setting

PARTICIPANTS	TOPIC & ISSUES DISCUSSED	SYNTHESIS OF CUES
 Institute of Clinical Physiology CNR Pisa	Environmental epidemiology ➢ The disease has a multifactorial etiology	A reflection is needed to clarify specific elements that contribute to decide appropriate methods to make decisions and take actions in public health policies
 Department of Epidemiology of the Lazio Regional Health Service	Study Design: problems, needs and limitations ➢ National and international case studies	The cohort study, aiming at defining the risk on individual basis, represents a further qualification of the epidemiological study than the approach of micro-areas
 Institute of Atmospheric Sciences and Climate - CNR	Modeling of the pollutant dispersion ➢ Different possible approaches in complex atmospheric conditions	Modeling the effects requires an estimation as accurately as possible in order to relate cause, effect and impact
 ARPA Toscana	Recording of the environmental timeseries ➢ The emission context	Detailed analysis of the historical trends of micro-pollutants and the comparisons between different areas and time periods
 Azienda USL 8 Arezzo	Epidemiological surveillance and health profile ➢ Mortality and morbidity in the exposed area	Polluted industrial areas have a highly sensitive community. Human biomonitoring and epidemiological studies have been already carried out to support the local decision making
 ARPA Emilia-Romagna	Methodologies and tools for the monitoring of the environmental impacts ➢ Evaluation of scenarios and impacts of the waste management options	Changes in the waste management have significant implications for human exposure modifying the impacts on population health
 Local associations of social and health promotion	Transparency and information to the community involved ➢ Methods of participation and roles	Not only the studies on health and environment should be object of an appropriate communication but also the definition of the new waste management strategy should be discussed and opened to input from the associations of local citizen



HIA21 Partnership and working group:



More information at the project web site www.hia21.eu