



Contents lists available at ScienceDirect

Waste Management

journal homepage: www.elsevier.com/locate/wasman

Participatory health impact assessment used to support decision-making in waste management planning: A replicable experience from Italy

Nunzia Linzalone^{a,*}, Alessio Coi^a, Paolo Lauriola^b, Daniela Luise^c, Alessandra Pedone^d, Roberto Romizi^e, Domenico Sallese^f, Fabrizio Bianchi^a, HIA21 Project Working Group¹

^a Institute of Clinical Physiology, National Council of Research, Via Moruzzi, 1, 65124 Pisa, Italy

^b Regional Agency for Environmental Protection Emilia-Romagna, Via Begarelli, 13, 41100 Modena, Italy

^c Local Agenda 21, Via Sarpi, 2, 35138 Padova, Italy

^d Centro Formazione e Ricerca Socio-Sanitario ed Ambientale Francesco Redi, Via della Fioraia, 17/19, 52100 Arezzo, Italy

^e International Society of Doctors for the Environment, Via della Fioraia, 17/19, 52100 Arezzo, Italy

^f Department of Prevention, AUSL 8, Via P. Nenni, 20, 52100 Arezzo, Italy

ARTICLE INFO

Article history:

Received 21 March 2016

Revised 19 August 2016

Accepted 26 September 2016

Available online xxxx

Keywords:

Waste policy

Stakeholder engagement

Democratic participation

Health impact assessment

Public health

Integrated approach

ABSTRACT

The lack of participatory tools in Health Impact Assessment (HIA) to support decision-makers is a critical factor that negatively affects the impacts of waste policies. This study describes the participatory HIA used in deciding on the possible doubling of the municipal solid waste incinerating plant located near the city of Arezzo, Italy.

Within the framework of the new waste management plan, a methodology for the democratic participation of stakeholders was designed adopting the Local Agenda 21 methodology. Communication and participation events with the stakeholders were set up from the plan's development to its implementation.

Eleven different categories of stakeholders including individual citizens were involved in 21 local events, reaching over 500 participants in three years. Actions were performed to build the commitment and ownership of the local administrators. Then, together with the environment and health agencies and a representative from the local committees, the local administrators collaborated with scientists and technicians in the knowledge-building and scoping stages. Focus groups of voluntary citizens worked together with the researchers to provide qualitative and quantitative evidence in the assessment stage. Periodic public forums were held to discuss processes, methods and findings. The local government authority considered the HIA results in the final decision and a new waste strategy was adopted both in the short term (increased curbside collection, waste sustainability program) and in the long term (limited repowering of the incinerator, new targets for separate collection).

In conclusion, an effective participatory HIA was carried out at the municipal level to support decision makers in the waste management plan. The HIA21 study contributed to evidence-based decisions and to make a broadly participatory experience. The authors are confident that these achievements may improve the governance of the waste cycle and the trust in the public administration.

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1. Introduction

Through a virtuous waste management system, direct and indirect impacts related to air and water quality, landscape deterioration, road transportation, social equity, and health can be

E-mail addresses: linunzia@ifc.cnr.it (N. Linzalone), acoi@ifc.cnr.it (A. Coi), plauriola@arpa.emr.it (P. Lauriola), luised@comune.padova.it (D. Luise), spedone64@gmail.com (A. Pedone), isde@ats.it (R. Romizi), d.sallese@usl8.toscan (D. Sallese), fabrizio.bianchi@ifc.cnr.it (F. Bianchi).

* Corresponding author.

¹ See complete list of the HIA21 Project Working Group co-authors in the online version.

prevented or minimized at the local level (Forastiere et al., 2011; Kim et al., 2011 and Martuzzi et al., 2010). The European Union encourages individuals, households, businesses, and local and national governments to take a prudent and environmentally responsible role in the sustainable use of resources and in waste reduction (EC, 2012a and EEA, 2013). In addition, the recent review by the European Commission on the current regulatory framework highlighted the need for more adequate waste management strategies and awareness to fully meet the objectives set in the waste legislation by 2020 (EC, 2013).

The setting of waste management policies is highly controversial and both the participation of those concerned and the use of

<http://dx.doi.org/10.1016/j.wasman.2016.09.035>
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scientific evidence are important components in the assessment of fair alternatives (Negev and Teschner, 2013). Particularly, public involvement may increase trust in the institution, which is paramount to the perceptions of risk in the public (Viklund, 2003). Decision making processes will take advantages from widespread consultation of communities to effectively understanding how groups willingly take a certain risk. However, risk perception is determined not only by knowledge but also by a mixture of individual factors (social, cultural, political and emotional). Also, different demographic groups within a population have been shown to perceive risk differently mainly due to their specific living conditions.

A framework on public participation has been laid down since the Rio Declaration on Environment and Development (UNCED, 1992). The conference stated that participation was a fundamental dimension of sustainable development and formally recognized the importance of public participation for environmental decision-making. Furthermore, the public access to environmental information was firmly established in the Aarhus Convention (UNECE, 1998). Also the European Framework Directive on Waste (EC, 2008) introduced the need for a democratic and transparent approach in the waste policy decision making. Specifically, the guideline for the waste management plan stated the general principle of including a consultation in each stage of the planning process in order to take informed decisions (EC, 2012b).

Participatory decision-making processes are fundamental to meet the need of a new right of citizenship - to live in an environment adequate for human health and well-being - which is expressed in taking part in the choices. More effective decision is contemporary ensured through the sharing of objectives and solutions about the problem, the inclusion of local knowledge, the listening to disadvantaged and different interest groups (Glucker et al., 2013). Structured participatory processes clearly define, in their early planning stage, basic features (timelines, extent and method of participation, expected effects) and factors (timeliness of involvement, representativeness of the participants, openness of the process, potential to modify the decision). Although a participatory process tends to a deliberative democracy, in most cases, the decision-making power remains in the hands of policy-makers who retain the right/duty of the decision (Regione Emilia-Romagna, 2012). However, it is crucial that the scope of the process is clarified and agreed in advance explaining the extent to which the institutions will be engaged about the recommendations (O'Faircheallaigh, 2010).

The decisional process, aimed at the best choice for the environment and all those concerned (including social components, professional corporations groups within the community), currently adopts tools from the impact assessment discipline (such as strategic, environmental and health impact assessment) in order to set up policy interventions (Bäcklund, 2009). Although shortcomings in the impact quantification have been recognized—mainly due to the lack of effective public participation (Gagnon et al., 2010; Glucker et al., 2013 and Hartley and Wood, 2005)—some applications have tried to advance learning, best practices and models in order to achieve real public participation (Chadderton et al., 2013; Greig et al., 2004; O'Faircheallaigh, 2010 and Saarikoski, 2000). As developed by WHO, the Health Impact Assessment (HIA), inspired by values of democracy, equity, sustainable development and ethical use of the evidence supports health issues outside the specific public health sector (Frankish et al., 2001 and WHO-ECHP, 1999). Fundamental stages in the HIA process answering key questions to facilitate a systematic assessment of the health impacts are: (i) screening – do we need an HIA?; (ii) scoping – how are we going to do HIA?; (iii) assessment – how do we get down in business?; (iv) reporting of recommendations – what goes in the report to decision makers? Reporting and recommendation

phase includes a dialogue with the decision makers to agree on viable interventions and on how to track their implementation. The overarching framework in HIA is the use of a participative approach to quantify future impacts (PAHO, 2013; Quigley et al., 2006 and Winkler et al., 2013). Therefore, HIA recognizes the importance of quantitative assessment methodologies and also qualitative input data incorporating both scientific evidence on environmental and health issues and adopting participatory models in all the stages of the process to provide basic local knowledge (Scott-Samuel, 2005 and WHO, 2013). Specifically, the participation of representatives of the local society key aspect to an effective HIA, widens the knowledge regarding the local political and social circumstances (Ison, 2013; Negev, 2012 and Tamburrini et al., 2011). Questionnaires, interviews, focus groups and workshops are usually listed as qualitative methods in impact assessment. HIA practice, adopted internationally since the nineties, is an ad hoc process to guide policy decision-making in order to improve the health status of the population, particularly the most disadvantaged social groups. HIA can assess the negative impacts of different options and propose solutions to enhance the positive ones. As a consequence, HIA is a mechanism for public health prevention when avoids risks by tackling the determinants of health rather than the risks factors. In this sense, the acknowledgment of the perception of risks in the population affected has a great relevance (SCU-UWE, 2014). Experiences at the international level have clearly demonstrated that the success of HIAs in terms of the ability to influence the decision to be taken is enhanced by the broad participation (maximum inclusion) of the stakeholders and the transparency of information (Spickett et al., 2015). However, developing the waste sector strategies and facility plans require to address the social dimension in decision making to gain the necessary public support. Disclosure of analytical-deliberative process examples in waste management has been provided by Garnett and Cooper (2014). A participatory process may be of help in reducing objection of communities against new waste plants when are involved in a planning process from the very beginning (Salhofer et al., 2007). When HIA is not included in the planning phase and is carried out on new projects of waste facilities rather than on the waste management plan, the participation has a narrow focus and is limitedly representative (Chadderton et al., 2013). Often participation is intended to provide information or to realize a consultation and is not addressed to include external contributions to modify processes and decisions (O'Faircheallaigh, 2010). Although in the participation experiences several practical problems need to be addressed to satisfy performance and quality, many pragmatic solution-oriented approaches are available (Bobbio, 2004). The consideration of the social and cultural context has been provided by a new generation of participatory tools. In particular, the Local Agenda 21 (UNCED, 1992) has introduced a participatory reform, relating the dialogue on sustainability to any specific local circumstances, beyond the traditional consultation between local authorities and stakeholders (Coenen, 2009).

In Italy the government of public affairs is organized at a national, regional, provincial and municipal level. The regional government provides guidelines in relation to the capacity of waste treatment and on the upgrade of existing plants. They also define the optimal territorial units for waste management (“Ambito Territoriale Ottimale”, ATO), which are responsible for meeting the agreed targets. The provincial government develops plans for waste management in accordance with the regional plan as well as with the general national criteria.

In Tuscany, a region in central Italy, the “ATO South” (an area including 103 municipalities) in 2000 adopted a waste management plan that includes the incineration activity of a plant burning about 40,000 tons per year of urban waste, located in the industrial area of the municipality of Arezzo. In 2008, a transitional plan

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