

## Chapter 63

# Urban Environment Quality in the Italian Spatial Data Infrastructure

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### ABSTRACT

*Public access to environmental information is granted by international law. The European Community has established an Infrastructure for Spatial Information (INSPIRE) in order to provide data and information to effected environmental policies. ISPRA coordinates the Italian Environmental Information and Monitoring System (SINA) and represents the national Inspire coordination structure. Moreover, ISPRA disseminates environmental information through reports, on-line services, and WebGis. Recently, a new WebGis has been developed to provide public access to environmental indicators data contained in the annual report on urban environment quality. Soil, water and air quality, waste, industrial risk, transport and mobility, acoustic and electromagnetic pollution, nature and biodiversity, tourism, and energy were analysed in 34 urban areas. The WebGis provides simple and powerful tools to analyze environmental dynamics of urban areas promoting participatory planning. It was designed to easily access and select the indicators data and to represent their spatial and temporal distribution.*

### INTRODUCTION

The importance of pursuing sustainable development has been emphasized during the last decades by international organizations such as the United Nations and the European Union. The 1972 dec-

laration of the UN Stockholm Conference on Human Environment begins stating that “Man is both creature and moulder of his environment, which gives him physical sustenance and affords him the opportunity for intellectual, moral, social and spiritual growth” and that “The natural growth of population continuously presents problems for the preservation of the environment, and ad-

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equate policies and measures should be adopted, as appropriate, to face these problems” (United Nations, 1972).

Today the portion of the world population living in cities and towns is rapidly increasing. European citizens currently living in urban areas represent almost three-quarters of the entire population and their ratio is expected to reach 80% by 2020. The rapid urbanization of the population will pose major challenges to the management of urban environment. One of the efforts the European Commission is undertaking in order to improve the status of the environment in urban areas and the quality of life of their inhabitants, is the development of a set of indicators describing the quality of urban environment and its evolution trend. All Member States are required to define such indicators for cities with a population greater than 100,000 inhabitants (Commission of the European Communities, 2004).

The Rio Declaration on Environment and Development (United Nations, 1992) and the Johannesburg Declaration on Sustainable Development (United Nations, 2002) affirm that citizens’ participation in decision-making processes at all levels and public access to environmental information are crucial to the achievement of environmental sustainability.

The European Union issued many Directives in order to grant public access to environmental information (e.g. Directives 2003/4/EC and 2007/2/EC).

## **ENVIRONMENTAL INFORMATION AND INSPIRE DIRECTIVE**

The 1972 Declaration of the United Nations Conference on the Human Environment, emphasizes the need of “acceptance of responsibility by citizens and communities and by enterprises and institutions at every level” in order to pursue environmental sustainability (United Nations, 1972).

In 1992 the United Nations formulated in principle 10 of the Rio Declaration on Environment and Development the citizens’ right to participate in the choices of the public authorities in environmental matters at all stages of decision-making, also declaring that “each individual shall have appropriate access to information concerning the environment that is held by public authorities” (United Nations, 1992).

Subsequently, the “Convention on access to information, public participation in decision-making and access to justice in environmental matters” (United Nations Economic Commission for Europe, 1998), also known as Aarhus Convention, affirmed that:

- Public administration “shall ensure that environmental information progressively becomes available in electronic databases which are easily accessible to the public through public telecommunications networks” (Article 5 paragraph 3);
- Public administration “shall make appropriate practical and/or other provisions for the public to participate during the preparation of plans and programmes relating to the environment, within a transparent and fair framework, having provided the necessary information to the public” (Article 7).

The Aarhus Convention was ratified in Italy with L.108/2001, while the European Union implemented the Convention by adopting the specific Directives 2003/4/EC and 2003/35/EC.

During the last few years many studies attested that spatial information and web-based gis (WebGis) can play a major role in promoting participatory planning by disseminating environmental data (Culshaw et al., 2006; Simão et al., 2009). In this context the Directive 2007/2/EC establishes an Infrastructure for Spatial Information in the European Community, also known as INSPIRE, “for the purposes of Community environmental

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