



## **Mediterranean Health Interview Surveys Studies: long term exposure to air pollution and health surveillance**

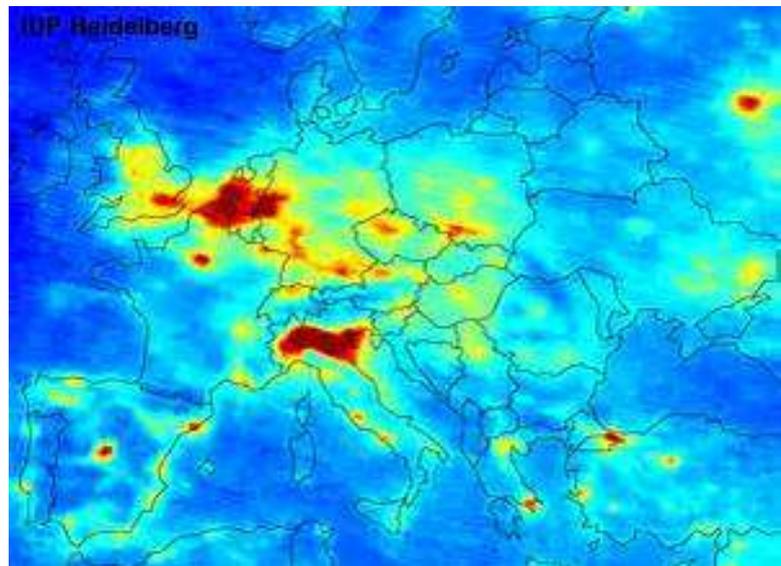
LIFE12 ENV/IT/000834 MED HISS

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### ***Summary of the project***

Air pollution is the number one environmental factor contributing to premature mortality and it importantly affects quality of life, given its contribution to the onset and worsening of cardiovascular and respiratory diseases.

The European Commission is engaged from many years in evaluating air pollution real impact on human health and promoting effective measures to its reduction. Many studies have demonstrated an association between short-term exposure to air pollution and the occurrence of acute health events. However, less is known about the health effects of being chronically exposed to high air pollution levels, which is the current situation for a large part of the population in the Mediterranean area.



**Nitrogen dioxide over Europe, 2004. Photo: ESA**

A better knowledge of the long-term health effects of air pollutants is mandatory in order to guide the European policy dealing with environment and health.

The problem targeted by the MED HISS project is to estimate long-term health effects of air pollution in four Mediterranean countries (France, Italy, Slovenia and Spain), providing new evidence to support EU legislation and implementing an epidemiological cheaper surveillance system to monitor these effects over time. The project started on 1<sup>st</sup> July 2013.

The proposed low-cost approach, suitable for surveillance, is based on linking resources like air pollution prediction models, National Health Interview Surveys, already available and mandatory in all European countries

and mortality and hospital admissions registries.

In particular, the surveys contain representative samples of the general population, covering both urban and rural areas. Each individual is ideally linkable to mortality and hospital admissions information. A measure of exposure has been assigned through the national deterministic dispersion models (in France-CHIMERE, in Italy-MINNI, in Slovenia-ARSO and in Spain-CALIOPE) integrated with monitoring stations information.

The recent scientific literature is confirming that long-term air pollution exposure (especially particulate matter) has effects on mortality for cardiovascular and respiratory diseases and for lung cancer too, in European population.

Nevertheless, these studies were mainly focused on few big cities or on particular sub-population (susceptible groups). In most cases the studies are referred to health data at an individual level (behavior habits, socio-economic status etc.) or to aggregated health data (e.g. measurement of characteristics to municipality level).

**MED HISS wanted to settle an inexpensive way to monitor health effects of air pollution over time, covering the whole national territories and all European population.**

The lessons learnt during the MED HISS experience in using national surveys for epidemiological purposes are very useful for other countries, to develop low-cost approaches for the measurement of health effects of air pollution over time.

MED HISS addressed the necessity to target the issue of surveillance highlighting the following key points: 1) surveillance systems for air pollution-related health effects are feasible in several European countries; 2) the cohort data could be standardized using protocols and procedures; 3) the available data should be compared across countries and over time; 4) the health effects could be estimated in each country, in relation to different health endpoints; 5) policy makers should be informed on the results of these systems, and supported on possible mitigation strategies to minimize the impact of air pollution; 6) this approach requires to overcome possible restriction due to privacy policies.

It can be important for the EU to know the trend of health risks associated to air pollution over time. **MED HISS surveillance system could be sustained for long periods of time and could allow to explore trends over different decades.** The aim of MED HISS was to demonstrate the feasibility of this kind of approach in France, Italy, Slovenia and Spain, in order to make it available in all European countries.

LIFE MED HISS joined the “**LIFE KTE EnvHealth network**”, Knowledge Transfer and Exchange in Environment and Health, established after the **LIFE National Thematic Meeting** “Participation, risk perception, knowledge transfer and exchange in environment and health” held in Florence, Italy, on 13<sup>th</sup> April 2016.

Arpa Piemonte (Italy) was the **Coordinating Beneficiary** of the project.

[www.medhiss.eu](http://www.medhiss.eu)

### Coordinating Beneficiary

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