

Doctoral Thesis Proposal: Development and implementation of a methodology for the evaluation and management of the air quality by the approach of risk scenarios, and application in Gran La Plata region.

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Abstract: Air pollution poses a major threat to public health worldwide. The WHO estimates that air pollution in Latin American cities causes at least 35,000 premature deaths per year.

An accurate assessment of the risks associated with exposure to atmospheric pollutants is needed to improve environmental management. In this sense, scenarios or risk maps are an ideal tool to visualize the territorial problems.

The proposal for this doctoral thesis is the development of a methodology that allows the evaluation and management of the air quality by the approach of risk scenarios.

The methodology will be tested in Gran La Plata region, composed of La Plata, Berisso and Ensenada (Argentina). Previous studies have shown high levels of particulate matter, polycyclic aromatic hydrocarbons, metals and volatile organic compounds in this region, with adverse effects on the population health.

As part of the risk analysis, air quality indicators will be developed and integrated with social vulnerability indexes. Air quality indicators will be generated through information obtained by remote sensing techniques and field data provided by the Centro de Investigaciones del Medio Ambiente (UNLP). The vulnerability degree will be determined by means of spatial analysis using information from Censo Nacional de Población, Hogares y Viviendas (INDEC) and the Instituto Geográfico Argentino. The information will be integrated into geographic information systems where the environmental risk will be quantified.

Available Means: The thesis project includes the stay of the doctoral student in the Centro de Investigaciones del Medio Ambiente (UNLP) and in the group of Geoenvironmental Cartography and Remote Sensing (UPV), where both have the necessary equipment for the development of the thesis.

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