

# **DEFINITION OF METEO-CLIMATIC SCENARIOS FOR REGIONAL IMPACT OF CLIMATIC CHANGES: AN EXAMPLE FROM NORTHERN ITALY**

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Climatic characteristics of Lombardy region (Northern Italy) make this area unique in Europe, as far as territory and environment are concerned. In fact the morphological features of the regional territory (approximately 50% in mountain area, 40% in plain area), the presence of an important lake (Como Lake, 146 km<sup>2</sup>) and high density of population (nearly 9 million people) emphasize “extreme meteorological events” linked to Global Climatic Change.

The climatic variability and the sensitivity of this region to signals of change are clearly defined in the spatial-temporal analysis of temperature, snowfall and rainfall examined within the RICLIC-WARM Project (Regional Impact of Climatic Change in Lombardy Water Resources: Modelling and Applications).

Seventy meteorological stations are considered, covering an area between the Ticino and Oglio rivers (more than 60% of regional surface). Analysis of historical meteorological datasets (1951-2003) has shown the main climatic trends and underline dry and wet periods, following mainly the NAO seasonal index, and register the main critical meteorological events. The CLIVAR indices (frosty days FD0, icy days ID0, tropical nights TR, summer days SU, dry CDD and wet periods CWD ecc..) have made the role of meteorological impact evident on available water resources in Lombardy and the importance of rational management.

Indices put in evidence “anomaly periods” that are used to define possible scenarios (for example the summer heat wave of 2003).

These meteorological scenarios are used as base for the socio-economic analysis, in order to describe the most relevant drivers of the study area, from a social and economic point of view.