



Georeferencing natural disaster impact footprints : lessons learned from the EM-DAT experience

Pascaline Wallemacq and Debarati Guha Sapir

Center for Research on the Epidemiology of Disasters (CRED), Belgium (pascaline.wallemacq@cred.be)

The Emergency Events Database (EM-DAT) contains data about the occurrence and consequences of all the disasters that have taken place since 1900. The main objectives of the database are to serve the purposes of humanitarian action at national and international levels; to aid decision making for disaster preparedness, as well as providing an objective base for vulnerability assessments and priority setting. EM-DAT records data on the human and economic impacts for each event as well as the location of said event. This is recorded as text data, namely the province, department, county, district, or village.

The first purpose of geocoding (or georeferencing) the EM-DAT database is to transform the location data from text format into code data. The GAUL (Global Administrative Unit Layers) database (FAO) is used as a basis to identify the geographic footprint of the disaster, ideally to the second administrative level and add a unique code for each affected unit. Our first step has involved georeferencing earthquakes since the location of these is precise. The second purpose is to detail the degree of precision of georeferencing.

The application and benefits of georeferencing are manifold. The geographic information of the footprint of past (after 2000) and future natural disasters permits the location of vulnerable areas with a GIS system and to cross data from different sources. It will allow the study of different elements such as the extent of a disaster and its human and economic consequences; the exposure and vulnerability of the population in space and time and the efficiency of mitigation measures. In addition, any association between events and external factors can be identified (e.g.: is the famine located at the same places as drought?) and precision of the information in the disaster report can be evaluated. Besides this, these maps will provide valuable communication support since maps have a high communication power and are easily understandable by the wider public and policy makers.

Some results from the application of georeferencing will be presented during the session such as a study of the population potentially exposed and affected by natural disasters in Europe, a flood vulnerability analysis in Vietnam and the potential merging of watersheds analysis and flood footprints data.