



Long term volcanic hazard analysis in the Canary Islands

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Historic volcanism in Spain is restricted to the Canary Islands, a volcanic archipelago formed by seven volcanic islands. Several historic eruptions have been registered in the last five hundred years. However, and despite the huge amount of citizens and tourist in the archipelago, only a few volcanic hazard studies have been carried out. These studies are mainly focused in the developing of hazard maps in Lanzarote and Tenerife islands, especially for land use planning. The main handicap for these studies in the Canary Islands is the lack of well reported historical eruptions, but also the lack of data such as geochronological, geochemical or structural.

In recent years, the use of Geographical Information Systems (GIS) and the improvement in the volcanic processes modelling has provided an important tool for volcanic hazard assessment. Although this sophisticated programs are really useful they need to be fed by a huge amount of data that sometimes, such in the case of the Canary Islands, are not available. For this reason, the Spanish Geological Survey (IGME) is developing a complete geo-referenced database for long term volcanic analysis in the Canary Islands.

The Canarian Volcanic Hazard Database (HADA) is based on a GIS helping to organize and manage volcanic information efficiently. HADA includes the following groups of information: (1) 1:25.000 scale geologic maps, (2) 1:25.000 topographic maps, (3) geochronologic data, (4) geochemical data, (5) structural information, (6) climatic data. Data must pass a quality control before they are included in the database. New data are easily integrated in the database.

With the HADA database the IGME has started a systematic organization of the existing data. In the near future, the IGME will generate new information to be included in HADA, such as volcanological maps of the islands, structural information, geochronological data and other information to assess long term volcanic hazard analysis. HADA will permit having enough quality information to map volcanic hazards and to run more reliable models of volcanic hazards, but in addition it aims to become a sharing system, improving communication between researchers, reducing redundant work and to be the reference for geological research in the Canary Islands.