

SUMMARY

The Catalan Prepyrenees have been historically the zone where the mass movements had the biggest effect within our territory. Due to this, we have the mayor information of this zone and therefore it makes more sense to carry out a study upon these characteristics.

The aim of the first part of the project is to define an already existing database, the LANDACAT (Landside Database of Catalonia), in order to create a new version that allows the introduction, in a simple and at the same time complete way, of the available information. The Database contains all the information fields that could be interesting for the study and description of the mass movements, making easier the summary of the information and its following enquiry. With this tool the data management will be easier, obtained through the different established sources, to establish a standard file that describes the principal characteristics of each and every phenomenon.

The principal information of the work comes from one of the most extensive summaries of the mass movements in Catalonia: the inventory of the effects of the floods of November 1982 at the riversides of the Llobregat and Cardener, carried out by Clotet, N & Gallart of the Geological Service of the Regional Government of Catalonia in 1984. In this inventory more than 300 movements have been described in a very concise manner concentrated on an area of 2.500 square kilometers.

Once the information has been transformed in order to respect the Database we proceed to the analytical study of this information, this way we obtained lots of interesting results, like the preferential distribution of some phenomena according to the ground type or the prevalence of certain lithologies in mass movements of large areas. The following step to be taken, in order to analyse this information, is the inclusion of a tool that is not longer an accessory element in the past to an essential tool for the analysis of any phenomenon: the GIS. (Geographic Information System). Through the GIS. we incorporate new data to the information, like the slope of the soil or the quantity of fallen rain, this will allow us to establish new behaviour standards of the materials present in the study zone.

The classification of these phenomena using generic criteria, like the slope of the land or its incline has been very difficult due to the enormous quantity of properties that can be decisive at the moment of studying any type of instability of the ground. Although we obtained some interesting results like the quantity of rain for the formation of the mass movements in study area, that is about 200 mm of rainfall in 48 hours. We should point out the high average of 0,41 phenomenons/km² arisen during the rainfall and the threshold of the slope almost 25° in the whole area. These are some of the results we observed, but throughout the study we obtained others like for instance linked with the use of the ground or permeability.

On the other side we have to point out the high grade of vagueness of some data coverage, which provided unreal figures in some movements. This lack of precision is due to the low resolution of the tracks employed in combination with the small size of the studied movements.