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LANDSLIDE DATABASE IN THE LOWER SECTION OF THE BASIN OF DEBA RIVER IN GUIPUZCUA, SPAIN: A TOOL FOR THE DEVELOPMENT OF HAZARD AND RISK SCENARIOS

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With the aim of making better predictions in the future to reduce the risk due to landslides, researchers try to design different hazards and risk scenarios, on the hypothesis that it is possible to conceive those scenarios with a detailed knowledge about landslides occurred in the recent past, their causes and consequences.

To build these models and risk scenarios in the lower basin of the Deba in Guipuzcoa, Spain, it has been designed a database with principal landslides recorded in the last 56 years, mainly shallow slides and flows.

It has been stored not only core attributes (location, time, triggering factors) and related documentation (historical data, scientific publications, agency archives), but also different basic data of geospatial type (images, geology, lithology, vegetation, weather data, MDE , faults, and other data). From these data we proceeded to obtain for the study area different possible causative factors (temperature, precipitation, soil, geology, lithology, ...), including its variation over time.

Currently this information is being managed using a commercial database of fileGeodatabase type with ArcGis. The recovery for analysis of possible causative factors by researchers can take place either from an Intranet, using different computing environments, both GIS (ArcGIS) like statistical (R); or using standard GIS services over the Internet for obtaining maps (WMS, WCS) or spatial entities (WFS).

In this paper, the design criteria for the geodatabase are described first. Then the focus is on obtaining the causative factors from the available spatial data. Different basic analysis are also presented. It concludes with a discussion of the strengths and weaknesses of using databases to analyze this information.

Handouts

- gsa2015_sanchezJavier_end.pdf (6.8 MB)

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T56. Landslide Inventories and Time Series: Data Collection, Statistics, Geospatial Analysis, and Relationships to Other Geohazards

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