A Geodatabase of the Northern Portugal region

S. Pereira (1), C. Bateira (2)

(1) University of Oporto, Geography Department (pereira.ss@gmail.com), (2) University of
Oporto, Geography Department (cbateira@gmail.com)

In the northern Portugal region there are several geomorphologic evidences and no-
tices of landslides that until today weren't aggregated in a geodatabase, in order to
perform a geostatistical analysis. It is presented a project of landslides geodatabase
in a Geographical Information System environment. This database construction was
based in the main conditioning elements (morphology, geology, slope angle, slope
hydrology, weathered materials), and triggering factors (rainfall and human activity).
The main information sources used were landslides records published in local, re-
gional and national journals, papers, historical documents, aerial photographs, local
testimonials and landscape geomorphologic evidences, between 1950 and 2006. These
records were selected and interpreted on a scientific basis before being inserted in the
database. This work is in constant update process, and will have the information about
the spatial (type, age, velocity, state of activity, style and distribution), temporal dis-
tribution and damages. The geodatabase will give the necessary information to define
the landslide hazard, vulnerability and risk. The landslides records and characteriza-
tion is very important, because in a short period of time after the process occurrence
they can't be recognized in the landscape due to a fast geomorphologic evolution
and vegetation growth, cleaning of the materials, rebuilding and streets reconstruction
that erases the scare evidences and other landslide features. The proposed landslide
geodatabase is composed by several records, descriptions, photography's, classifica-
tions, cartographical information (e.g. geology, morphological systems, DEM's, hy-
drographical network and soil usages) at several scales (from regional to local) in
different landslides stages. This work pretends to be a contribution in landslides risk
cartography in the planning and territorial order, at the northern Portugal. This will
help to compile data in order to determine rainfall thresholds to the different land-
slides types, useful to organize civil protection strategies.