

FOURTH INTERNATIONAL CONFERENCE ON GEOMORPHOLOGY - Italy 1997

Round Table Geomorphological Hazards: a European Strategy

MARIO PANIZZA (*)

INTRODUCTION

First of all I wish to present the participants that have accepted to explain some topics of this round table, and they will also help to stimulate ideas from other participants:

Dr. RICCARDO CASALE, officer in charge of Natural Hazards Research in the European Commission, Bruxelles;
Prof. JORDI COROMINAS, professor of Engineering Geology at Technical University of Catalunya, Barcelona;
Prof. RICHARD DIKAU, professor of Physical Geography, University of Bonn;
Prof. JEAN-CLAUDE FLAGEOLLET, emeritus professor of Geomorphology at L. Pasteur University, Strasbourg.

The aims of this round table are both to explain and discuss some deeper knowledge that has arisen from research in «Geomorphological Hazards», with a special focus on Landslides, and also to indicate the prospects for similar research in the future.

It is possible to explain the characteristics of the research with the following summary.

First of all they have been executed in this subject with funds from the Commission of the European Union, and in particular from the «Directorate General XII - Science, Research and Development».

The research up till now has been comprised of the «Second Framework Program» (from 1989 to 1992), of the «Third Framework Program» (from 1991 to 1994), and of the «Fourth Framework Program» (from 1994 and is still ongoing); We will also talk about the perspectives for the «Fifth Framework Program» that is near to its realization. Moreover, all of the research represents the most important contribution of the European Commission in the field of the Program «International Decade for Natural Disaster Reduction».

The research is also transnational, with the collaboration of numerous universities and other research organiza-

tions from various European countries, in all of the teams the Public Administration is also present.

The various national teams have used the same methods in different geographic situations.

The main theme is «the landslides», studied both from a spatial view, and particularly from a temporal view. The second aspect is analyzed in an original way, in terms of frequency, period and intensity of the movements.

Another important aspect that I would like to remark and particularly in this International Conference on Geomorphology, is that even though the research is interdisciplinary, the main discipline remains Geomorphology; along with it there are Engineering, Geology, Geotechnics, Hydrogeology, Topography etc.; in the study of Geomorphology many innovative methodologies are used for Computing, Data Banks, Geographical Information Systems, Remote Sensing, Monitoring, Modelling, Warning systems etc.

The details of what I have just briefly mentioned will be further illustrated by the participants on this Round Table, but before I hand over the floor, I would like to share some further thoughts.

In dealing with the serious problem of natural hazards it is necessary to first bypass the ideas of emergencies, of damage repair, and of extraordinary interventions, and focus instead on the prediction and prevention, we need to thus start with strict scientific knowledge of the phenomena as the fundamental base in both confronting emergency situations and in risk mitigation.

Risk mitigation can be achieved either by reducing the *hazard* or/and reducing the *vulnerability* (fig. 1).

To reduce the hazard there are two possibilities: in the case of *process modification* it is necessary to know the exact causes of the geomorphological hazardous phenomena; in the case of *hazard resistance*, it is necessary to prearrange particular measures to protect the environment that is subject to a specific geomorphological hazardous process.

To reduce vulnerability there are also two possibilities: in the case of *structural measures* that must be adopted

(*) Dipartimento Scienze Terra, Università di Modena, Italy.

against a risk, it is necessary to know all the characteristics of the geomorphological hazardous phenomena; in the case of *prediction* and *forecast* the role of the knowledge of the geomorphological hazardous processes is more and more important thanks to remote sensing, computer elaboration, monitoring systems and simulation models.

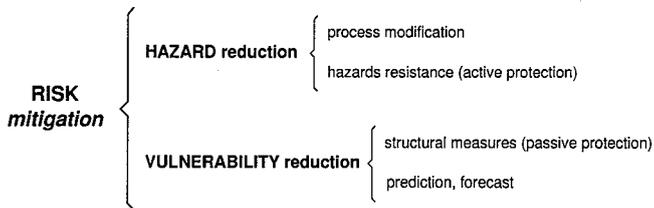


FIG. 1

REFERENCES

- FANTECHI R. & CASALE R. (eds.) (1994) - *Ricerca, Pubblica Amministrazione, Industria: una strategia comune per la salvaguardia del territorio*. Comm. Europ. D.G. XII, Bruxelles, 228 pp.
- HORLICK-JONES T., AMENDOLA A. & CASALE R. (eds.) (1995) - *Natural risk and Ciovil Protection*. E & FN SPON, London, 554 pp.