

The impact of natural hazards constitutes a growing problem of considerable dimensions worldwide. Since the second half of the twentieth century, the increase in population, migration flows, the occupation of new spaces and the growing vulnerability of our society have led to an alarming increase in the risk of catastrophe or disaster due to natural phenomena.

The analysis of this chapter focuses on phenomena of natural origin and more especially on geodynamic phenomena of both exogenous origin (floods, landslides, rockfalls, snow avalanches, subsidence and coastal phenomena), and endogenous origin (especially earthquakes and, to a lesser extent, volcanism) that have a damaging impact on the territory, which is increasingly occupied and used by its inhabitants. These phenomena are part of the geological and geomorphological processes (some of sudden occurrence but all recurrent) that change and evolve the Earth's surface (formation and erosion of its relief). In short, these are phenomena which are inherent to natural systems and which unquestionably condition living beings.

This chapter analyses and diagnoses geohazards, mainly in the geographical area of Catalonia but in other neighbouring territories (Catalan Countries) as well.

We have a good level of scientific and technical knowledge but it is not always transferred to management actions. Databases with documentation on past disasters and a good evaluation of the risk exposure and the physical and social vulnerability of the territory are lacking. There are cartographies of danger and hazard zoning but they do not yet cover the whole territory and in some cases the scales are inappropriate. There are well-designed civil protection plans but, to ensure their full effectiveness, the complete implementation of emergency plans at municipal level is needed. It is necessary to improve the coordination between the technical procedures, the mitigation actions and the planning of the territory. To do this, it is essential to make a coordination effort between the public administrations and the competent bodies. Regulations are fragmented and dispersed in different legislative areas, and this may lead to non-compliance. It has been found that, although ours is an industrialized, advanced and supposedly resilient society, citizens are not aware of their degree of exposure to natural risk, nor of their individual and collective vulnerability. To remedy this deficiency, it is necessary to improve the information to society and to educate children and young people in relation to natural hazards. Irresponsibility in territorial development, especially in decision-making on land use and, more specifically, on urban planning, has led to a significant increase in exposure to disaster risk.

Lastly, a series of proposals is made for geohazard management and risk mitigation, with a view to better governance and coexistence with tolerable risk levels.