

EDITORIALE

LEADER

by

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GEOHAZARDS, RISK EXPOSURE AND SOCIAL VULNERABILITY

November 2019 was a month not only of heavy rain- and snow-falls across Europe, but also of the explosion of youth movements campaigning for action to counter climate change and organising strikes (Fridays for Future) in many cities of the world. These events culminated in a speech given by Greta Thunberg during her participation in a meeting of the UN General Assembly.

The anthropogenic impact on global warming is an extremely intricate issue, which can arouse very harsh scientific and political debates. It is not our intent to go into the details of the matter here (a paper by Nicola Scafetta - “On the Reliability of Computer-Based Climate Models” - was published in issue no. 1/2019 of this Journal). It is however unquestionable that both a heightened social awareness of global water, air, and soil pollution and the cry of alarm repeatedly launched by many people, especially younger ones, deserve our utmost attention. International and national policies can no longer relegate environmental sustainability to the background, and governments should place the issues of conservation, protection, and wise management of environmental resources at the core of their agendas. In this connection, the President of the European Commission, Ursula von der Leyen, has recently unveiled a strategic agenda underpinning the so-called European Green Deal.

However, faced with this broad-ranging environmental advocacy, which is already having (and will increasingly have) major political and economic repercussions, we cannot and should not overlook one element that I regard as fundamental.

Invoking climate change as the sole culprit of all the disasters that extreme events have recently produced should not become the default option when considering its consequences on our lives and on our future. At times, we have the impression that people tend to neglect a primary factor in the increase of damage to property and casualties caused by rain- and flood-induced disasters. This factor is the “risk exposure” of people and property, which has grown beyond control in the past few decades.

This growth in risk exposure is compounded by what I would call social or “cultural” vulnerability, i.e. poor awareness of natural hazards among large groups of the population.

Thus, if we use a general risk (R) equation ($R = H * E * V$) for a given hazard (H) level (steady or unsteady is a matter that is being and will be thoroughly investigated and debated by scientists), we cannot deny that there has been a tremendous increase in the degree of risk exposure (E): just think of the number of structures, buildings, and infrastructure located in river areas and related vulnerability (V).

To make matters worse, “cultural” vulnerability, too, appears to be on the rise, owing to a perverse attitude: despite the fact that science can now provide leading-edge tools and knowledge to ensure higher safety/security levels than in the past, we are failing to take minimum prevention and self-protection measures in extreme weather events.

To make a somewhat far-fetched but effective analogy, let us think of what happens when we drive: as we rely on increasingly sophisticated components and pervasive active/passive safety/security features, we are inclined to drive less carefully and are distracted by the many devices that surround us, notably our smartphones.

Hence, as the levels of exposure and of vulnerability (especially in the cultural sense) become increasingly higher, the level of risk increases in spite of a steady level of hazard. If the level of hazard also increases, then the risk to a community grows to such an extent that we will have to revise the level of socially acceptable risk accordingly.

With regard to non-structural prevention activities, e.g. emergency drills and awareness-building actions, I would like to mention my experience during the Flegrei EXE 2019 drill that the Italian Civil Protection Department organised last October jointly with the Campania Region and the Municipalities of the Phlegraean Fields red zone.

In spite of an extensive awareness campaign launched by

the Department together with regional and municipal governments, public attendance was very poor and definitely below expectations. However, two positive elements emerged: i) most of the attendants were young parents with children, demonstrating that geoenvironmental risk awareness is higher among some groups of the population; and ii) the EXE 2019 emergency drill was associated with a number of awareness-raising initiatives

(e.g. *Io non rischio / Diamoci una scossa*) in many piazzas of the municipalities involved, and these events had a good attendance: all this in an area with a level of volcanic risk that is among the highest in the world.

In conclusion, there are still many things to do in terms of information and communication about risks from natural events in order to make people more aware of their risk exposure.