



Geoportal "READY:Prepare, Prevent, Stay Informed"

Aurelia Sole (1), Raffaele Albano (1), Luciana Giuzio (1), Salvatore Manfreda (1), Massimo Maggio (2), Aldo Presta (3), and Giovanni Albano (2)

(1) University of Basilicata, Università della Basilicata - D.I.F.A., School of Engineering, Potenza, Italy (aurelia.sole@unibas.it, 0039 0971205215), (2) Paesit S.r.l. - Potenza- Italy, (3) La Cosa S.r.l. - Cosenza- Italy

Information, communication, and training at all levels of a hydrogeological risk prevention culture is useful and necessary to develop the awareness among the people; this awareness can only lead to the correct application of the rules and correct behaviours that reduce the risk.

A territorial system is more vulnerable to a calamitous event if there is little risk knowledge, in terms of knowledge of phenomenology of the event itself, of its own way to manifest and of the actions needed to mitigate their harmful effects.

So, the Geoportal "READY: Prepare, Prevent, Stay Informed," developed by the School of Engineering at the University of Basilicata in collaboration with Paesit srl and Wat-TUBE, a spin-off of University of Basilicata, aims to inform people in an easy and correct way. This can improve the knowledge of the territory in order to promote the consciousness and awareness of the risks affecting the territory, in geo-localized form, even through using the memory of past disasters and precise directions on what to do for a tangible reduction of the risk.

The Geoportal stores and dynamically integrates a series of layers that, individually, have a lower utility, but integrated into the web-based platform represent, for the prevention of the risks of the citizens, the anatomy for medicine. In fact, it makes the data not only available but concretely accessible.

It is created on the "MapServer" platform, an open source web mapping suggested by the European Directives in the field of geographic database publication, and covers the Italian territory.

It is designed to increase the knowledge of the areas at potential flood and landslide risk, delineated by the Authorities in the "P.A.I. (Piano di Assetto Idrogeologico)", and the elements which could possibly be involved in potential events with a particular attention to the critical infrastructures, such as bridges, railways and so on, and relevant structures, such as schools and hospitals. It permits the visualization and the interrogation of other layers important to the knowledge of the phenomena, such as lakes, dams and rivers, the most important river basins and watersheds, lithological, geological and geomorphological maps. The "AVI (Aree Vulnerate Italiane)" database, a census of all the areas affected by landslide and flood events from 1918 to 2000 built by the GNDICI - CNR, is usable and geo-localized in the software in all its sections. The AVI database stores data about the typology and characteristics of the selected event, the causes, and the direct and indirect damage with an estimation of the economic and population loss. Knowledge of past events could be the key in creating awareness among the population on future risks.

The Geoportal has other ad-hoc tools to greatly improve the flood and landslide risk knowledge.

For example, it can geo-localize a land parcel to check if it is in area at potential flood or landslide risk and its land coverage, and to highlight how many potential people and workers are involved (ISTAT database).

The user can also drag and drop their own layers in the Geoportal. For example, the user could upload in the map a single building to check if it is in area at potential risk. The measure tools could help understand the amount of the building areas at risk or the distance between the building and the risk area. Finally, the print tool allows the user to store any maps created.

The software could highlight the criticality of the territory and, hence, inform the people working or living within the risk area.

The geocoding tool permits the search by address. This could be useful to check the geo-position of a building or a bridge. Adjunctive layers give us the information about the effect of a possible scenario on this bridge. The "Street View" Tool permits navigating, for example, in the proximity of the bridge or in the area at risk.

The coverage of this kind of data is now available only to a portion of the Italian territory but the software will publish data for all the Italy as soon as possible, and take into account other natural risks. The aim of the project is also to implement some of the available emergency plans in the territory in the portal.

Finally, the portal gives us information on the behavior in case of alert in order to increase the auto-protection culture. In fact, it highlights the safety actions and the areas to avoid in case of an alert during the flood or landslide event and before the events are taken to prevent it. It is communicated by a system of graph symbols designed

ad-hoc. It could contribute to the standardization of a system of symbols in the field of risk communication. The software also will be implemented in a mobile version with an interface which is quicker and easy to use. The software could be utilized, in the future, as a support tool in the coordination of emergency actions of the civil protection workers through vehicle monitoring and the management of the best route in an emergency phase.