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Video Games in Volcanic Hazard Communications: Methods & Issues

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Educational outreach plays a vital role in improving the resilience of vulnerable populations at risk from natural disasters. Currently, that activity is undertaken in many guises including the distribution of leaflets and posters, maps, presentations, education sessions and through radio and TV broadcasts. Such tried-and-tested communication modes generally target traditional stakeholder groups, but it is becoming increasingly important to engage with the new generation of learners who, due to advancements in technology, obtain information in ways different to their predecessors. That new generation is defined by a technological way of life and it remains a challenge to keep them motivated.

On the eastern Caribbean island of St. Vincent, the La Soufriere Volcano lies in quiescence since the last eruption in 1979. Since then, an entire generation - over 56% of the population (Worldbank, 2015) - has little or no direct experience of a volcanic eruption. The island experiences, more frequently, other hazards (hurricanes, flooding, earthquakes landsliding), such that disaster preparedness measures give less priority to volcanic threats, which are deemed to pose less of a risk. With no accurate predictions to warn of the next eruption, it is especially important to educate residents about the potential of future volcanic hazards on the island, and to motivate them to prepare to mitigate their risk.

This research critically examines the application of video games in supporting and enhancing existing public education and outreach programmes for volcanic hazards. St. Vincent's Volcano is a computer game designed to improve awareness and knowledge of the eruptive phenomena from La Soufriere that could pose a threat to residents. Within an interactive and immersive environment, players become acquainted with a 3D model of St. Vincent together with an overlay of the established volcanic hazard map (Robertson, 2005). Players are able to view visualisations of two historical eruptions (1902 &1979), which are reproduced based on historical data and personal accounts of the eruptions. Through a series of interactive scenes, each of the principal hazardous phenomena associated with La Soufriere - pyroclastic flows & surges, ash fall and lahars - are visualised and explained. The game concludes with a quiz in which players are required to answer questions are based on information provided throughout the game.

The St. Vincent's Volcano game was trialled in St. Vincent during a volcano awareness education week in April 2015. The presentation will share reflections on how this type of interactive tool can be tested and implemented, and explore the issues and challenges with using video games in a dynamic environment.