Probabilistic approaches of volcanic hazard maps are used to communicate and inform stakeholders, however are not sufficient for the best understanding of decision makers for whom the uncertainties involved are crucial.

Recent research conducted in the Volcanic Central System of Tenerife Island shows that the next expected eruption might have a VEI 4. Geochronological data of different volcanic deposits show that in the last 10,000 years the Volcanic Central System of Tenerife Island has experienced at least 16 eruptions, with VEI 4 for 10 of them.

In this new context, 1,200 simulations in the central area of Tenerife Is., with VEI from 3 to 5 and different emission centres, have been modelled according to the parameters and probabilistic behaviour of the 16 eruptions occurred in the last 10,000 years.

From these simulations we have calculated Population Risk Curves showing how many people are affected by hazard scenarios and finally the probability of potential causalities caused by an expected eruption in one year. Results show that the number of expected causalities become important starting VEI 3.0. An increase in the number of expected causalities is obtained with very small variations of the hazard scenario probability. With the current knowledge is impossible to forecast between one hazard scenario and another, so the Emergency Plan has to take into account the worst-case scenario.