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'Understanding volcanoes and society: the key for risk mitigation'



Nyiragongo volcano (Congo, DR): vulnerability and risk assessment of Goma urban area

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Goma is a ~ 700,000 inhabitants city, located 15 km South of the Nyiragongo volcano. This volcano last erupted in 1977 and in 2002, each time seriously affecting the surrounding villages and endangering Goma. In 2002, lava flows devastated 10% of the city, triggering not only direct impacts (150 deaths, buildings and roads destroyed), but also long-term economic consequences (International Goma Airport runway reduced to half its length for more than 10 years, trading affected, administrative buildings and archives destroyed, etc.). In addition to the volcanic risk, the region is also exposed to a complex geopolitical situation which severely contributes to the precarious condition of the population. In that very specific context, part of the GeoRisCA project has focused specifically on the volcanic risk assessment of Goma urban area. How vulnerable is the population? How to assess its vulnerability? Do people have resilience mechanisms to face such potential disaster? How do they consider volcanic risk in their daily life? What is the role of the DRR local institutions? Based on a comprehensive methodology relying on remote sensing, quantitative and qualitative field data, and deep knowledge of the studied area, hazards and vulnerability indices have been defined and compiled in a Geographic Information System (GIS). A local risk map and the associated database were finally developed as decision support tools, enforcing risk management of existing preparedness and mitigation institutions. As such, GeoRisCA constitutes a baseline study in this region, evidencing the importance of a strong partnership between scientists and institutions in charge of risk management and prevention. Moreover, GeoRisCA is showing that a deep knowledge of the area and the society is crucial as well as a constant dialogue between researchers from natural and human sciences is essential to a contextualized vulnerability assessment.