Abstract AVCoR-2013

C. Michellier et al Le développement urbain de Goma/Rubavu: synonyme d'augmentation du risque aux aléas d'origine volcanique?

The cities of Goma (Democratic Republic of Congo) and Rubavu (Rwanda) are located at the bottom of the Nyiragongo volcano, one of the most active African volcanoes. During its last eruption in January 2002, about 150 persons died and more than 10% of Goma city was destroyed by the lava flow. Other volcanic hazards, such as the presence of high CO_2 concentrations in certain places along Lake Kivu shore (*mazuku*), are also threatening the population living in these cities.

GeoRisCA project (2012-2016), funded by the Belgian Scientific and Policy, aims at assessing risk due to geo-hazards. In this framework, the development of this urban site is studied as a major vulnerability component, which might contribute to risk increasing. The specific objective of our approach is to identify the urban growth tracks of the city, and to highlight areas which could be more at risk, because of volcanic hazards (*i.e.* if another eruption occurs; location of permanent *mazuku*).

In other to reach this objective, Landsat images have been analysed to identify the land cover changes over a 25-year period. On one hand, we observed that urban growth has been particularly strong in Goma city, towards west, especially between 1989 and 2001. The phenomena is much more limited in space in Rubavu but a population densification has occurred. On the other hand, the knowledge regarding the various volcanic hazards is recent and in constant evolution. Although the development of prevention program and specific on-site warning indicators, the proportion of the population and the areas at-risk have heavily increased over the past 25 years. This phenomena is due to several elements; the most evident being the uncontrolled population increasing.

The output of such a study highlights areas which are more vulnerable and thus more at-risk to the studied geo-hazards. Maps established on these results could become a tool to urban planning, as well as to risk prevention and disaster management policies (*e.g.* input for a contingency plan to locate safe places, which could be used as gathering point in case of an emergency).