

ESTIMATION OF EXPOSED POPULATION
TO LANDSLIDES AND FLOODS RISK AREAS
IN BRAZIL, ON AN INTRA-URBAN SCALE

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**ESTIMATION OF EXPOSED POPULATION TO LANDSLIDES AND FLOODS
RISK AREAS IN BRAZIL,
ON AN INTRA-URBAN SCALE**

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ABSTRACT

The knowledge on population demographics and the living conditions in risk areas are crucial for risk management and disaster response. In Brazil, this information is not available yet on a national scale. With the goal of characterizing at risk populations, in the present article a methodology is proposed to associate demographic census data with risk areas for landslides and floods in Brazil. The unique source of information about the Brazilian population, available for the entire country, in intra-urban scale, is provided by the Population Census developed by the Brazilian Institute of Geography and Statistics. However, the association of census information with risk areas cannot be done in a direct and automated way, due to the different geometries between the risk areas and census tracts. Considering the need to associate data from distinct geometries, a new basemap was created, named Statistical Territorial Base of Risk. Its graphical delimitations incorporate information from the population census about the mapped risk areas. The proposed methodology was initially implemented in three pilot municipalities located in the state of Rio de Janeiro (Petrópolis, Teresópolis and Nova Friburgo). The results show the estimation of approximately 155.000 people exposed to the risk of landslides and/or floods in 1.357 risk areas. It also allowed for the identification of regions within those municipalities with the highest concentration of at-risk population. The availability of information on the conditions of exposure of populations residing in risk areas can subsidize decision makers in the context of disaster risk management.

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