

Losses from landslides disasters: Analysis of the landslide inventory of Rio de Janeiro State, Brazil

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The State Landslide Inventory of Rio de Janeiro, Brazil, was launched two years ago with the support of Geological Survey of Brazil, the Pontificia- PUC-Rio and Rio de Janeiro Geotechnical Department. This Inventory is based on the same principles of the World Landslide Inventory and represents a contribution to the International Decade for Natural Disaster Reduction.

This Geographic Information System's based database was structured to record information about date, location, type, causal factors (geomorphology, land use and geology), damage and mitigation procedures for all significant landslides that affect the 44,000km² area of Rio de Janeiro State. This structure helps preparing landslide reports which build up the inventory and increases the knowledge about the geological factors that cause landslides, which is particularly important for landslide hazard assessment and risk management. Computer applications are connected to database through Internet for query and presentation.

Statistical analysis of Landslide Data in the last decade allows the assessment of landslides, displaced mass volumes and landslide damages, as well as annual, monthly and geographical distribution. Evaluation of these data shows that the most common type of movement in Rio de Janeiro are shallow slides and that they are extremely concentrated between January and March. Landslides have affected 1578 houses, 86 buildings, 222 traffic routes, 61 public buildings and caused 714 deaths from 1966 to 1998. The results obtained along the investigation and landslide inventorying can be used in the preparation of landslide risk maps and quantitative assessments of landslide hazards.