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Capacity Building on Geohazards in Africa - PanAfGeo Project

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Geohazards are events governed by geological features and processes that cause severe threats to humans, property and the natural and built environment. In Africa, the most frequent geohazards are earthquakes and volcanic activity; flooding; landslides and secondary mass movements associated with loose deposits due to human activities; gully and coastal erosion.

Also geoenvironmental (anthropogenic) hazards pose a severe threat such as: pollution of aquifers and surface environment due to mining activity (gold, hydrocarbons, copper, uranium, coral sands, etc.); toxic gas emissions; radioactive soil radiation; heavy metal contamination in urban drainage system; and waste disposal. With more than 40% of the population living below the poverty line, sub-Saharan Africa is also the least-equipped and prepared area to cope with the impacts of these events. Eastern sub-Saharan Africa is one of the most hazardous place on the continent, as it is prone to both volcanic and earthquake hazards. Africa has about 140 volcanoes that have erupted during the last 10 000 years, 25 of them are active. The past few years have seen an unprecedented amount of volcanic and seismic activity in the East African. The most disastrous eruption happened in Mount Nyiragongo, Congo D.R., in 2002 that forced the evacuation of 500,000 people and killed 150. Devastating earthquakes with magnitude >6 occur almost annually in the East African Rift. Recent events include the February 2006 Mozambican M7.5 earthquake, which was one of the largest ever recorded in Southern Africa. Landslides constitute also one of a major geologic hazard affecting almost all African countries. Landslides commonly occur in connection with other major natural disasters such as earthquakes, volcanic eruptions, wildfires, and floods. Another problem is related to land degradation caused by erosion, desertification, deforestation, and poor agricultural practices which are destroying the resources on which African farmers and their families depend. Floods are among the most devastating natural hazards in Africa, whereas flash floods are the most dangerous events arising from tropical cyclones and severe storms. Floods and flash floods cause loss of life, damage to property, and promote the spread of diseases. From 1900 to 2006, floods in Africa killed nearly 20 000 people and affected nearly 40 million more. A questionnaire was distributed to numerous African geological surveys participating in the “*Geoscientific knowledge and skills in the African Geological Surveys*” study, involved in geohazards activities and interested in cooperation under the PanAfGeo EGS-OAGS project. Indicated information sources on geohazards analysis are different in each country. Based on gathered information on geohazards analysis, systematized data portals or data bases are still not available. There is also obvious shortage of information on geohazards classification methodology, modern mapping methods, equipment, skilled staff and hotspot area identification. The majority of the countries indicated a range of needs and expectations in the field of geohazard analysis. As a consequence, during the implementation of the PanAfGeo project, specific training courses on geohazards will be planned following a multi-module and multi-discipline approach. Accordingly, the schedule of the training programme has to consider the sub-division of the whole training courses into several modules that will consider main themes/hazards to be tailored following interests and skills of trainees as well as importance of considered hazards in the region or country where the training will be organized. Special

emphasis will be given on the new methodologies for monitoring and forecasting geohazards, capacity building, including staff training and new products of earth observation (EO).

