

Engineering Geology and Landslide Assessment and Its Mitigation Measures In Adishiho area, Southern Tigray, Northern Ethiopia

DESTA, MINYAHL TEFERI

Abstract

The aim of this field work is to assess the active landslide sites and hazard zoning, description of the type and cause of landslide and to make fundamental important data base for future and remedial measures. The research area is covered with limestone (about 2%) in north eastern and south western, limestone-marl-shale intercalation (about 26.4%) in the northern, eastern, and south western part of the study area, limestone-marl-shale with dolerite intercalation (about 0.5%) in the central volcanic two (olivine, pyroxene and plagioclase rich) (about 20.9%) in the southern central north eastern border, volcanic one (basanite) (about 23.6%) in the south central, upper sandstone (about 23.2%) in the south-western and eastern and quaternary deposits (about 4.4%) in the central part near Kuleat and Adikuchi. Topographic maps at the scale of 1:50000 were used for field mapping. At seven sites VES conducted to determine the thickness of the overburden. Four test pits were dug to extract soil sample and identify soil horizon. Many types of structures are identified in the study area such as faults, joints, karst features, folds, dikes, and sills. The thick limestone specially characterized by the presence of fracture (joints) with different orientation. At first, a preliminary zoning of similar susceptible units to landslide activity, and followed by field examination of the geological, geotechnical, geomorphologic and hydrological factors that contributes to landslide activity.

Keywords: landslides, Kuleat, Adishiho, geotechnical properties, mitigation