



An Assessment of Rainfall-Induced Rize Landslide and Flooding

E. Subaşı (1), S.B. İkizler (), Z. Angın (), G. Demir (), and A. Kayahan ()

(1) Gumushane university, civil engineering, gumushane, Turkey (subasi_esra_53@hotmail.com), (2) Department of Civil Engineering, KTU, Trabzon, Turkey (banuh73@gmail.com), (3) Department of Civil Engineering, KTU, Trabzon, Turkey (angin@ktu.edu.tr), (4) Department of Civil Engineering, Cumhuriyet University, Sivas, Turkey (gokhandemir61@hotmail.com), (5) Department of Civil Engineering, KTU, Trabzon, Turkey (ahmetkayahan@yahoo.com)

The Rize province (Northeast of Turkey) is one of the most important landslide regions in Turkey. The mean annual rainfall value exceeds 2200 mm in the area. Many areas in Rize are susceptible to intense rainfall. Seasonal high-intensity rainfall plays a key role in provoking landslide movements. Torrential rainfall is the most important meteorological factor that can activate or accelerate the movement of sliding mass. In Rize, many landslides and a very destructive flooding occurred in 25 September 2011 because of heavy rainfalls, which 226.6 kilograms rainfalls falled into the area, and 1 people died and several buildings were damaged as results of these natural hazards. This study investigates the influence of intense rainfall on the activity of the Kasarcilar village (Rize) landslides. In this context, natural water content, optimum water content, maximum dry unit weight, bulk density, internal friction angle and cohesion of the soil were determined. Using these values, further geotechnical assessments will be carried out, and the stability conditions of the slopes exposed will be studied in details by deterministic approaches. The expected results will be shared with the local authorities and important engineering remedial measurements will be proposed to prevent further live losses and to mitigate property losses.

Key Words: Landslides, Intense Rainfall, Rize, Turkey