



## Landsliding and flooding event triggered by heavy rains in the Rize region

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Rize province has been significantly damaged by frequent landslides and floods which are caused by severe rainfalls and result in many casualties. The area is prone to landslides because of the climate conditions, geologic, and land cover characteristics of the region. The most recent landslide occurred on August 26, 2010 in Gundogdu town. The landslides have caused large numbers of casualties and huge economic losses in the region. Thirteen people died, twenty houses collapsed, more than a hundred houses damaged, and one hundred fifty vehicles were damaged in the Gundogdu landslide. Flood event is often seen in the region of Rize, due to continuous rainfall. Floods cause huge loss of life and property in this region. Rainfall is the most frequent landslide-triggering factor in East Black Sea region, Turkey, especially Rize region. Rize is the rainiest city of Turkey. Total annual precipitation is over 2300 mm, and precipitation is equally distributed in each month. However, in August 26, 166.5 mm precipitation rained within 24 hours in the region and this rainstorm caused great damage. The intensity rainfall periods were become as an indicator of landslide activity. It is very important that the presence of suitable lithologic units for occurring landslides. There are appropriate materials to contributed constitution of landslides in the study area; completely weathered dacite. In addition, intensity land cover types as tea plantations have been blocked surface flows and rainfall is able to quickly penetrate into the soil through open tension cracks that appear in the landslide head and in stretching zones. According to the results of the analysis, the study area has been overlaid tea garden 70 % percentage approximately. Furthermore, the landslide risks have increased by devastation of land cover in this region. In this region, over-steepened slopes, slope saturation in areas of heavy rainfall, and removal of slope vegetation can also increase landslide potential. The combination of all these effects have been affected to the settlement areas and living people in the study area. In this study, the effects of all the factors were separately examined on landslides.