

Geomorphological and geological factors of slope failures induced after Iwate-Miyagi Nairiku Earthquake

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Authors carried out the extraction of slope failure areas occurred after Iwate-Miyagi Nairiku Earthquake, from interpretation of 2 periods ortho images (immediately and 3 months after the earthquake). Study areas were along the Iwai river, Iwate Pref. (Iwai area) and Ichihazama river, Miyagi Pref. (Ichihazama area). The many failures immediately after the earthquake had been generated in Ichihazama area. Though, from ortho image of 3 months after the earthquake, the expansion ration of existing failure area and the occurrence ration of new failure of Iwai area was somewhat more than that of Ichihazama area. We examined the relationships between occurrence points of the failure, geomorphologic (slope angle) and geologic conditions. As a result, in Iwai area, the occurrence ratio of new slope failure tended to be high in the place of 30 degrees or more in Tertiary marine deposit zone. Whereas, in Ichihazama area, the occurrence ratio of new slope failure tended to be high in the place of 35 degrees or more in Tertiary andesitic lava zone. In Iwai area, we made the field investigations. Some cracks were found on the slopes where new failure occurred after the earthquake. Therefore, it was thought that these existences were a factor of the new failure after the earthquake.

Keywords: ortho image, slope failure, slope angle, geologic condition, crack