



The Geo-Hazards Triggered of Serial Reclamation Land of Extreme Precipitation in Typical Regions of the Loess Plateau

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The "Gully Land Consolidation Project"(GLCP) was widely carried out all over the world, such as Spain, the United States and China. It was a new attempt to solve the shortage of regional land resources. Aiming at the problem that the influence of extreme rainstorms on the "Gully Land Consolidation Project"(GLCP) on the Loess Plateau. By using the method of actual measurement and analysis of categorical data, the erosion disaster in July 26 2017 was investigated in Niu Xue Gully of Wuding River Watershed in Zizhou County of the Central part of the Loess Plateau. The results showed :

(1) The Niu Xue Gully Small Watershed in Zizhou County (109°55'25"E, 37°39'46"N), which was located in the central part of the Loess Plateau and belonged to the northern Shaanxi Loess Hilly-Gully region. The Niu Xuegou catchment covered an area of 0.48 km² and the average altitude of the region in about 1000-1200 meters, land consolidation in the basin about 38 mu□25333.3m²□since 2014.

(2) This storm was characterized by "long duration and large precipitation", the accumulated rainfall was 147.9 mm, the average rainfall intensity was 13.45 mm/h, the maximum rainfall intensity was close to 5 mm/min, the maximum flood peak discharge was 44.64 m³/s, the flood duration was about 11 hours, and the flood recurrence period was more than once in a hundred years.

(3) The storm caused nearly a thousand geological hazards at the channel of the basin. The main types of disasters were as follows, gravity erosion types, such as landslides, landslides, and

mudflows, account for 14.85% of the conventional geological hazards; secondary disasters of water erosion types, such as trench erosion and dam erosion, occurring at different locations on the slope, accounted for 51.05% and composite new-derived land destruction and dam break disasters account for nearly 10% .

(4) The damage of cascade land preparation was closely related to the average flood discharge, embankment height and ecological vegetation cover in the watershed.

The investigation provided technical support for the consolidation of the Chinese implementation of the "Cropland to Forest (Grass)" results on the Loess Plateau, and also provided theoretical support for the safe implementation of the "Gully Land Consolidation Project"(GLCP) around the world.

Keywords: The loess plateau; Extreme rainstorm;The "Gully Land Consolidation Project"(GLCP)

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