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Study on Geomorphic processes forcing the establishment of continuous agricultural land use method in the central Kenya

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This is the continuous study to clarify the changes in Earth Surface Environment in the Laikipia Plateau of central Kenya. In highland of central Kenya, the farmer's behaviors maintaining livelihood are controlled not only by socio-ecosystem condition but also by the land condition of cultivated site, in particular, the natural environmental factors. Understanding of the natural environmental factors of land condition, therefore, is important for the farmer's land use and control of the agricultural land.

On this point of view, we illustrated the maps of micro-landforms, based on aerial photograph interpretation and surface geological fieldworks, at an agricultural area in the Laikipia Plateau. In addition, we made clear the mode of predominant slope processes, such as surface and deep-seated landslides, soil creep, and soil erosion, acted on the each micro-landform unit.

Subsequently, we carried out the survey the slope forming materials on the slopes in Ngobit Settlement, where sheeting erosion are dominated on the slope surface, to clarify the geomorphic process changes on the agricultural land.

We identified the two sediment layers formed by the sheeting wash on the slope surface, each layer called IA layer and IIA2 layer. Although both layers contain many gravels, a layer between the both sediment layers, called IIA1 layer, has less gravels. Therefore, we conclude that increasing in the magnitude of the sheeting wash occurred twice on the slope. Former occurred at around 2700 to 1900 cal BP. Sheeting wash process acted heavy again on the slope since 600 cal BP.

Keywords: Kenya, land use, Geomorphic process, Slope erosion, Radiocarbon dating