

Sand harvesting in soil-eroded area under semi-arid climate, central Kenya

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The objectives of our presentation are to show geomorphological and environmental geographical conditions, and to clarify people's sand harvesting in the semi-arid pastoral area, Laikipia North sub-county. The investigated area, the Il Polei sub-location (N 0°21'56", E 37°04'32"), has an altitude of 1,750 to 1,850 m. According to previous literatures, a mean annual rainfall at the Mukogodo Station, close to the study area, is 362 and/or 371 mm; tree coverage is extremely low, which comprises sparse woods and shrub consisting mainly of *Acacia* genus. The area is underlain by Proterozoic gneiss, migmatite, quartzite, and schist, belonging to the Mozambique Belt, and inselberg-pediment systems are regionally identifiable with widespread distribution of pediplain.

Below piedmont angle of the system, near the central settlement, 1.5- to 2-km long gullies exist on the pediment. According to our topographic measurements since March 2015, the maximum retreat rates range from 1.1 to 25.6 m/yr. Sheet erosion extensively predominates in the whole area, in relation to the gullying. Recently, harmful pioneering plants, that is, *Opuntia* spp. and *Ipomoea* spp., etc., are allegedly invading the region.

In this area, local people manage sand harvesting for the construction demand in urban areas, while building cooperated society on the basis of group ranches. We will also show maintaining processes of the management, and quantitative trend of mining, under the above-stated environmental geographical condition in the presentation.

Keywords: sand harvest, soil erosion, gully, semi-arid, Kenya, environmental geography