

## Natural Resources in Semi-arid Pastoral Area, Central Kenya: Change of Plant Production during Past 30 Years

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This study makes tries to make clear plant production during the past decades and its relationship with physical and/or social environmental changes in a semi-arid pastoral area. The investigated area, the Il Polei sub-location (N 0°21'56", E 37°04'32") in the Laikipia North sub-county, central Kenya, 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 geomorphologically, inselberg-pediment systems are regionally identifiable with widespread distribution of pediplain. This area continues to be subjected to remarkable soil erosion since ca. 2 ka.

Most inhabitants are pastoral Maasai peoples, who have maintained livelihood under group ranch system, and it is reported that grazing pressure is gradually elevated. In addition, people recently associated cooperative organizations based on several group ranches, and engaged in the control of sand harvesting, which reacts the increase of construction demands in urban areas.

In this study, NDVI in the hot dry season (DEC-FEB) acquired from Landsat-5 TM and 7 ETM+ is used as the indicator of plant production. This value decreases 0.14 during DEC/1984 to FEB/2017, and this main cause will be discussed.

Keywords: Kenya, semi-arid area, pastoral area (grazing area), gully erosion, NDVI