

## Upslope catchment assessment for gully headcut retreat: case study in Kendu escarpment, Kenya.

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Gully erosion is a form of land degradation, which is caused by overland flow from its upslope catchment. Soil loss from croplands and/or residential areas and damage to the human infrastructure by gully headcut retreat are particularly serious issues for developing countries in sub-Saharan Africa.

We focused on the several gullies that incise agricultural lands on the foot of the Kendu escarpment, the southern part of Kavirondo Rift in Western Kenya. This report is dealt with the most severe gully headcut retreat and its upslope catchment from our studies.

Measurements of the gully headcut retreat between 2003 and 2004 were carried out and topography, geology and vegetative cover of the upslope catchment were investigated by field studies and remotely sensed imagery and analyzed by pixel-based data management. Smaller amounts of gully head retreat in geomorphologically erosive but densely forested subcatchment indicate that the existence of forests in potentially erosive catchments reduces overland flow. Our pixel-based catchment assessment can be a useful measure for risk management of gully head retreat in this environment.

Figure: Land cover map of the upslope catchments. Land covers are classified using NDVI values.

