

Improvement of grassland through community participation in the Middle Awash Valley of Ethiopia

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Keywords: grassland improvement; community participation

Introduction The natural resources of the grassland in the middle Awash valley of Ethiopia are subjected to competing claims: development to generate revenue for the state, conservation of wildlife and wilderness areas, as well as use for local production. The combination of climatic conditions causing drought and the over use of the natural resource can be cited as the primary cause of grassland deterioration in the area. Since the problems of the grasslands are complex and multi-dimensional, they are not amenable to quick and easy fixes. Hence, if sustainable progress is to be achieved, the responsibility for change must be in the hands of the communities and household themselves. Pastoral communities, in collaboration with CARE-Ethiopia, local government and other partner NGOs embarked on grassland improvement activities that were based on traditional activities. The objective of this study was to assess the condition of the traditionally-improved grazing lands.

Materials and methods Six traditionally-improved (IM) grazing lands locally known as ‘kalo’ and three nearby unimproved (UNIM) communal grazing lands were assessed at the peak of the growing season in 2003. Species composition and % bare ground were determined using the wheel point (Tidmarsh & Havenga, 1955). The frequency of occurrence of each species and bare ground was expressed as a percentage of the total number of points and grass dry matter (DM) yield was analysed using GLM.

Results The dominant grass species in the traditionally-improved and unimproved sites was *Chrysosopgon plumulosus*. The percentage of bare ground and non-grass species was higher in the unimproved grassland sites (bare, 11.9%; non-grass, 6.10%) than in the traditionally improved (bare, 5.9%; non-grass, 4.31%) ones (Figure 1). The non-grass species in both areas were *Cyperus bulbosus*, *Tribulis terrestris*, *Tephrosia* species, *Indigofera* species, *Sida ovata* and *Edostemon terticaulis*. The grass DM yield of the traditionally-improved grassland sites (mean for improved, 590 kg/ha) was higher ($p < 0.001$) than that of the un-improved ones (mean for unimproved, 268 kg/ha) and there was an improvement in grass DM yield by 119% (Table 1).

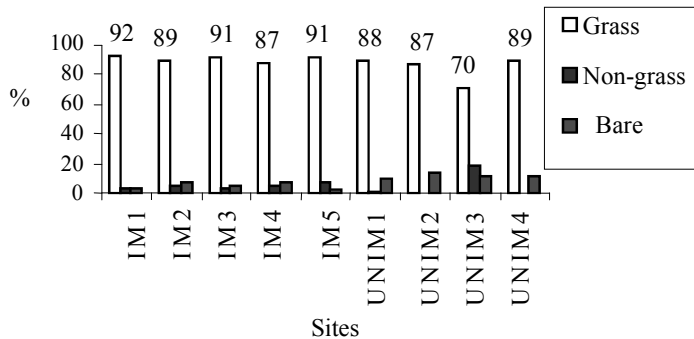


Table 1 Grass dry matter yield (kg/ha) at each site

Sites	Yield
IM1	830
IM2	600
IM3	830
IM4	470
IM5	455
IM6	355
UNIM1	230
UNIM2	340
UNIM3	235

Figure 1 The percentage of grass, non-grass and bare ground in improved (IM) and unimproved (UNIM) grassland sites

Conclusion The establishment of communal kalo is proving a plausible measure towards recovering the degraded grasslands. Optimal and sustainable use of the grassland requires an adequate rest period for the grass species to grow, to seed and be able to accumulate reserves for the next growing season. The purpose of kalo is to reserve an increased standing crop of forage for the dry season. In view of the need to match existing feed resources to livestock needs increased focus is required on the use of non-grazing feed resources as alternative feed resources and on improving markets and linking pastoral communities to the export market.

Reference

Tidmarsh, C.E.M. & C.M. Havenga (1955). The wheel point method of survey and measurement of semi-open grasslands and Karoo vegetation in South Africa. *Memoirs of the Botanical Survey of South Africa*, No. 29.