SUB-HUMID ZONE CASE STUDY 2

NGITILI: A Traditional Method of land Rehabilitation in Shinyanga Region, Tanzania.

BACKGROUND

Shinyanga region is situated in the north-western part of Tanzania, south of Lake Victoria at about latitude 2 - 5° S and longitude 31 - 35° E. The region has eight administrative districts and covers an area of 50,764 km^2 of which 31,140 km^2 is arable land, 12,079 km^2 grazable land and 7,544 km^2 forest reserves (HASHI 2002).

The present population is about 2.6 million people and population density varies between 18 persons per km^2 in Meatu District to 183 persons per km^2 in Shinyanga Urban District with an average of 35 persons per km^2 (HASHI 2002).

Altitude varies between 1000 and 1500 m above sea level. Rainfall ranges between 650 - 1000 mm with a mean of 700 mm. Monthly temperatures vary between 27.6° C to 30.2° C maximum and 15° C and 18.3°^{0} C minimum. The region is characterised by small hills, separated by *mbuga* plains and gentle slopes. On hilltops, soils are moderately well drained greyish brown and sandy (ferric acrisols and oxisols). Moderately deep well drained, greyish brown sandy loams (ferric luvisols) occur on the slopes. On the low-lying bottom lands, are the poorly drained black clays –"mbugas" - (cambisols and vertisols). Vertic soils are very extensive covering 47% of all soil types in the region.

Ecologically, Shinyanga region falls under the unimodal rainfall plateau. In this agro-ecological zone, a system of agro-pastoralism called *ngitili* is practised. *Ngitili,* which means leaving an area closed to allow grass regeneration for use during the dry season is an indigenous silvopastoral technology used to alleviate dry season fodder supply shortages, to conserve and protect soils and to reclaim degraded land (Kilahama 1994a, b, Maro 1995, Msangi 1995). Maize is the main food crop, followed by sorghum and rice, and cotton is the main cash crop. Livestock is an important component in the system; production is generally extensive, based on traditional communal grazing.

Natural vegetation was originally woodland and bushland. However, due to severe deforestation, many areas turned treeless except for a few acacia and baobab trees. The vegetation has gradually reverted to an open bush savanna.

In the past, the Shinyanga region had been extensively forested with woodland and bush land species such as *Acacia, Brachystegia, Albizia, Commiphora* and *Dalbergia* species. However, massive deforestation has taken place through shifting cultivation, tsetse fly and bird (principally *Quelea quelea)* eradication control campaigns in the early 1920s and 1930s. Most recently, extensive grazing has led to soil fertility decline and degradation with subsequent low crop yields, shortage of dry season fodder, scarcity of fuelwood and construction poles and severe wind and soil erosion (MNTE 1995).

In 1986, because of the severe land degradation problems of the Shinyanga region, the Government of the United Republic of Tanzania started a land rehabilitation programme HASHI (In Kiswahili HASHI stands for: Hifadhi Ardhi Shinyanga i.e., Shinyanga Land Rehabilitation Programme) to rehabilitate the degraded areas. From 1991, HASHI started receiving financial support from the Government of the Royal Kingdom of Norway through the Norwegian Agency for Development Cooperation (NORAD). At the same time,

funding was also extended to agroforestry research in collaboration with the World Agroforestry Centre (ICRAF). HASHI worked in tandem and served as an extension arm of the HASHI/ICRAF research project by disseminating tested technologies such as management of woodlots and improved fallows. HASHI activities were phased out in 2002, and the respective Districts now handle all activities.

OBJECTIVES

The overall objective of the HASHI project was that "Communities in Shinyanga increasingly use sound practices and technologies to manage the natural resources on a sustainable basis". This objective focused on the following key outputs:

- To secure increased awareness on natural resource management among actors;
- To articulate and implement improved land-use planning mechanisms and natural resource management practices;
- To strengthen institutional capacity for extension, monitoring and evaluation.

APPROACH

HASHI collaborated with regional and district agricultural, natural resources and community development staff and the local communities, who are the main beneficiaries, to implement the project.

The project gave emphasis to the re-establishment of Ngitili as well as other traditional natural resource management (NRM) techniques. Ngitili encompasses retaining of an area of standing hay until the rainy season ends, the area remains closed to livestock at the onset of the rainy season and is opened up at the peak of the dry season to allow the livestock get dry season fodder (Maro 1995, Mugasha et al. 1996). Grazing under *ngitili* normally starts from July/August after crop residues and forage in fallow areas have been depleted; and animals are removed from *ngitil*i after all the fodder is exhausted or when fodder becomes available outside the *ngitili* (Kilahama 1994a, b, Otsyina and Asenga 1994).

In order to achieve project objectives, various approaches and methods were employed aimed at greater participation of the community in every aspect of NRM. These approaches were: participatory rural appraisal (PRA), video and film shows, study visits, farmer to farmer visits, traditional dances (ngomas), theatre drama, publications (posters, newsletters, books), meetings, workshops, seminars, exhibitions, demonstration plots, youth camps and school excursions (HASHI 2002).

The main activities included:

- Seedling production and tree planting, land reclamation and soil and water conservation.
- Community participation and empowerment through training and awareness creation in adoption of sound land use practises and capacity building.
- Promotion of indigenous natural resources management practices with emphasis on natural regeneration (in situ conservation - *ngitili*).

- Development of agroforestry systems (e.g. homestead, on-farm tree conservation and planting, boundary planting, fodder banks, improved fallows and rotational woodlots).

- Development of alternative forest uses and income generating activities through establishment of "commercial" household tree nurseries, beekeeping and improved cook stoves.

RESULTS

Success

Over the 15 years of the HASHI project in its different phases, significant progress has been recorded (Nshubemuki et al. 2003):

- Increasing environmental awareness among the Shinyanga communities, Government leadership, Non Governmental Organisations (NGOs), Community Based Organisations (CBOs), local institutions, schools and individual farmers.

- About 180 villages have been involved in management of fodder banks in terms of enclosures (*ngitili*) each with about 540 ha. About 70% of the households in the region have been able to re-establish their traditional *ngitili* system of land management covering over 350,000 ha with huge dividends both for the natural environment and the livelihood of the communities. This practice has begun to enhance land tenure and reduce the traditional conflict-prone free grazing. There has also been a spill-over into non-project areas as well as reactivation and strengthening of indigenous institutions as regards NRM and grazing (HASHI 2002).

- Homestead tree planting (mainly indigenous species) and management of scattered trees on farmland was also promoted where about 15 trees per ha were retained in 2002 as compared to 5 trees/ha in 1998.
- Promotion of community and private tree nursery establishment and eco-museum development. Eco-museum development involved documentation of indigenous technical knowledge.

- Training of over 3,000 people including community groups which included 30% women.
- Village Environmental Committees (VEC) were established and environmental conservation by-laws formulated both at village and district levels. The by-laws have facilitated control of overgrazing, encouraged fire protection, tree growing, tree harvesting and control of charcoal burning.

Shortcomings

In the course of conceiving *HASHI* and implementation of planned interventions, some weaknesses were evident (Nshubemuki *et. al.* 2003):

- *HASHI* was traditionally planned as a central government project under the MNRT with very limited participation of the regional authorities and districts as well as other stakeholders in the region.

- The project lacked baseline studies.

- Limited extension staff has resulted in inadequate extension services in all parts of the region.

REASONS FOR SUCCESS AND LESSONS LEARNT

The success of the traditional *ngitili* system and other sound land use technologies in Shinyanga region can be attributed to awareness-raising, community participation and empowerment which resulted in re-establishment of this traditional land management and other land management systems.

RECOMMENDATIONS

Policy

Ngitili is a useful land use system, which needs to be scaled up to other districts of Shinyanga and other areas with similar ecological conditions. It is recommended that the policy makers put in place an enabling environment for wide scale adoption of the system.

Management

Communities should be trained in *ngitili* management to ensure adequate fodder availability.

Research

- The *ngitili* need to be improved to increase the availability of high quality dry season fodder and wood based products. This can among others be achieved through:
- Introduction of improved fodder grasses.
- Planting of fast growing fodder trees and/or shrubs.
- Determination of thinning regimes to encourage grass growth.
- Impact of the *ngitili* system on the livelihood of local communities.