

.THE VETIVER SYSTEM FOR SOIL AND
WATER CONSERVATION IN ETHIOPIA:
THE CASE OF ANNO AGRO-INDUSTRY
PLC, EAST WELEGA ZONE, GOBU SAYO
DISTRICT

By

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Introduction

- ▣ Anno Agro-industry is a share company of five
- ▣ It is located in East Welega of Oromiya Region
- ▣ The Company was established in 1994/95 and operates on about 500 ha of land
- ▣ The farm is found in a sub-humid zone
 - Rain fall- 1200 mm/ annum
 - Mean temperature - 26°C
 - Altitude -1780masl

Objectives of Anno Farm

- ❑ Generate income through production and dissemination of crop and livestock technologies to farmers
- ❑ Promote sustainable land use in its agricultural business
- ❑ Put high emphasis on soil and water conservation practices
- ❑ Create job opportunities to rural urban dwellers and contribute to the national drive of poverty reduction
- ❑ Contribute to regional and national economy via revenue generation (land rent & income tax)

Enterprise Mix

- ▣ Production and distribution of seeds of improved crop varieties
 - Cereals (Maize, Tef, Finger millet)
 - Pulse (Soya bean & Haricot bean)
 - Oilseed (Noug)
- ▣ Production and dissemination of in-calf F_1 crossbred heifers (Friesian X Horro) for milk production
- ▣ Production and distribution of dairy products?

Enterprise Mix Cont'd

- ▣ Fattening Operation (Cattle and sheep)?
- ▣ Honey production, processing and marketing?
- ▣ Fruits and vegetable production and marketing?
- ▣ Forest development and maintenance

Why Soil & Water Conservation Important in Ethiopia?

- ▣ Population growth , annual rate close to 4 % , has put an intense pressure of agricultural land
- ▣ This has not only resulted in **a considerable decrease in crop land per household**, but also pushed agricultural practices to non-traditional niches such as **steep hills and bottom land** grazing areas
- ▣ It has also caused **severe deforestation and overgrazing** with a resultant soil erosion that led to **poor land productivity and recurrent drought**
- ▣ **The overall aggregate consequences of these events are national economic, social and political crises**

Expansion of Agric Practices to Steep Slopes & Bottom Lands



Crop Field Terraces with Vetiver Grass

- ▣ It received its land from a state farm, which abandoned it for its poor productivity due to over-exploited soil fertility
- ▣ First two cropping seasons, following land acquisition 15 years ago, clearly indicated to us that some thing needs to be done to make this land productive
- ▣ Thus the company was engaged in field terracing with vetiver grass
- ▣ It developed 270 km of terraces with this grass along the contour of its crop fields

Maize Seed Field with Vetiver Grass Terraces, Anno 2008



Vetiver Grass Terrace Following Maize Seed Harvest



Advantages of Vetiver Grass

- ▣ Its strong fibrous root system penetrates deep into the soil forming a tightly knitted network that binds underground soil together and assists water to seep into the soil preventing runoff (Chaipattana Network, 1996)
- ▣ Vetiver hedgerows are known to preserve 25-70 % water to the advantage of the crop field.
- ▣ Since vetiver grass root system grows more vertically than horizontally, it does not compete for more space with crops planted in the field with the hedgerows.
- ▣ Mulching from vetiver grass leave cuts adds more fertility to the soil through naturally balancing the organic content, plant nutrients and microorganisms.

- ▣ Vetiver grass leaves can be used for handcraft weaving like baskets of various types, trays, hats, lady's bags, belts, picture frames, lampshades and many other household utensils in many countries (Chaipattana Network, 1996).
- ▣ Vetiver grass has extensively been used in the perfume industry, bio-fuel, pond filter, compost making and mushroom culture.
- ▣ It has been estimated that mulching cuts from 4-month old vetiver grass on average provides 1.29 N, 0.15 S, 0.20 P, and 1.3 % K, respectively of the weight of the dry grass

Forest Development & Maintenance

- ▣ Anno farm developed and maintains 40 ha of forest land
- ▣ Every year it plants over 25, 000 seedlings of indigenous and introduced tree species
- ▣ More emphasis is put on indigenous trees
- ▣ The forest land is enriched with coffee, banana and mango trees
- ▣ Forest development and maintenance enhanced underground water spring flow

Protected Forest Land at Anno Farm



Coffee Trees planted into the Forestland at Anno



Banana Trees under Forestland at Anno Farm



Mango Seedlings Planted into the Forestland at Anno



Mango and Banana Seedlings in the Forestland Viewed Together



Positive Impact of Forest Development on Water Recharge



Year-round Water Availability for Irrigation Due to Forest Development



Conclusions

- ▣ Commercial farms have a pivotal role to play in transforming traditional agriculture
- ▣ They must be well integrated with the surrounding communities
- ▣ They should serve as model for improved agric practices for the smallholder farms
- ▣ They can be a source of knowledge, technologies and income
- ▣ That was the role Anno tried to play ever since its inception

Thank You