



Good Practice No. 10

Vetiver Grass for Soil and Water Conservation on Farms in Taita Taveta County

A Guide for Farmers and Extension Agents



Vetiver grass clusters

February 2025

1.0 Introduction

Vetiver grass (*Chrysopogon zizanioides*), is a perennial bunch (tufted) grass that grows in open clusters. The grass is native to India and does well in the tropics. Vetiver is fast growing and has an extensive, fine, dense, and deep root system making it suitable for soil stabilization. The roots can grow up to 2-4 meters deep. Vetiver grass has strong stem, that can grow up

to 3 m tall in favourable conditions. When planted as dense hedge, vetiver grass allows water to spread and infiltrate, retaining much of the sediment behind the hedge and creating a natural terrace over time. The grass grows in diverse climatic and soil conditions and is highly drought tolerant.

Vetiver grass was introduced in Kenya in the early 1930s and is currently grown in various parts of the country including Taita Taveta County. Taita Taveta County is largely dry except for the Taita Hills which are wetter. The County receives an annual mean rainfall of about 650 mm and has an average temperature of 23°C. The County suffers from land degradation mainly due to; poor land management practices, soil erosion, deforestation and climate change.

Voi is one Sub-County in Taita Taveta County, that is prone to soil erosion due to its sloping topography which is dotted with hills such as Sagalla Hills. The erosion has resulted in loss of top soil and soil fertility decline, resulting to low crop production and food insecurity in the area. Vetiver grass was introduced in Voi to mitigate soil erosion due to its soil binding ability.

2.0 Objectives of growing Vetiver grass

- Soil erosion control
- Soil and water conservation on farms
- To increase farmers income through sale of vetiver grass products

3.0 Approach

To address soil erosion challenges in Voi Sub-County, different interventions have been

introduced by various Non-Governmental Organizations (NGOs) in collaboration with the county Government of Taita Taveta. One such intervention is growing of vetiver grass.

One model farmer who has adopted growing of vetiver grass in Voi is Mrs. Peninah Mwachia of Zongwani Village, in Sagalla. The farmer planted the grass for soil erosion control which is mainly caused by surface runoff from Sagalla Hills. The farmer acquired knowledge and skills of growing vetiver grass from other farmers near Sagalla Hills, where the grass was first introduced.

To plant vetiver grass, land is prepared by digging shallow trenches. Planting material, which consists of vetiver splits can be acquired through purchase in form of clumps or from own earlier plantings. The roots of the clump are then cut to about 15cm and grass stem trimmed to a height of about 50cm. The clumps are then divided into individual splits. Each split is then planted in the trenches at a spacing of about 30cm. Planting is done at start of the rainy season when the ground is wet.

Vetiver grass can be managed by frequently pruning and harvesting splits which are then planted in other eroded parts of the farm or sold to other farmers.



Vetiver grass split



Vetiver grass planted for soil conservation on-farm



Vetiver grass bales



Vetiver grass used for traditional house roofing

4.0 Impact

- Soil erosion control as vetiver grass reduces speed of surface runoff
- Increased water retention and infiltration
- Increased crop production due to rain water and top soil retention
- Improved farmers livelihood
- Alternative source of income through sale of split sold at KES 100 and thatching grass sold at KES 300 per bunch
- Provision of alternative livestock feed as grass is harvested frequently at 4-6 weeks intervals
- Hedge formed by vetiver grass has improved the aesthetic value of the farm
- Formation of natural terrace as grass hedge traps sediment
- Income generation through sale of baskets and ropes made from vetiver grass

5.0 Sustainability

- Vetiver grass is multiplied vegetatively and increases in volume over time hence it

is easier for the farmer to acquire planting materials for expansion on other desired farm sites

- The grass is drought torelate and termite resistant and does not dry up even in drought season
- Vetiver grass is non-invasive, making it attractive to farmers
- The roots grow downward and therefore does not compete with adjacent crop
- The grass has a long-life span and persistence and is therefore suitable as a boundary maker
- Vetiver produces a lot of biomass, providing fodder and other materials on sustainable basis

6.0 Innovations

- The farmer dug a trench that acted as a water break and raised the soil to reduce speed of run-off
- The farmer planted splits at a wider spacing to give room for the grass to multiply through cluster expansion

7.0 Constraints

- Livestock damage, especially camel

8.0 Lessons Learnt

Vetiver grass:

- Is suitable for soil and water conservation, boundary demarcation, and riverbank rehabilitation
- Can be utilized for basketry and handicrafts which is a source of alternative farm income
- Does not encroach other areas making it farm friendly

9.0 Conclusion

Vetiver grass offers great potential in landscape restoration through; soil erosion control, reducing surface water run-off therefore increasing water retention and infiltration, leading to increased crop production and improved livelihoods.

Acknowledgement

The authors acknowledge Mrs. Peninah Mwachia of Sagalla, Zongwani Village, Taita Taveta County for providing information on growing of vetiver grass which enabled the compilation of this manuscript.

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