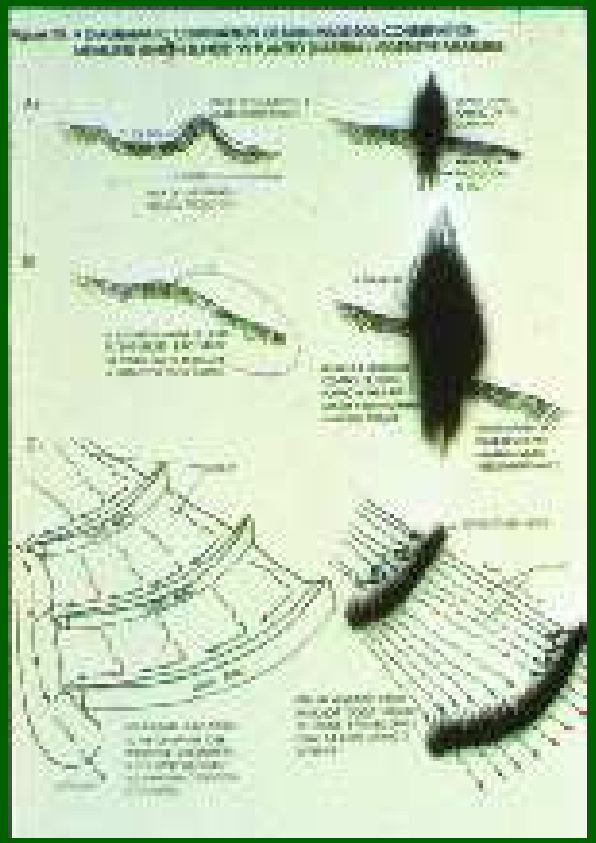
VETIVER SYSTEMS FOR SOIL AND WATER CONSERVATION



On the right is a drawing comparing the Vetiver System hedgerow that naturally creates up slope terraces by preventing the loss of soil and spreads out rainfall run off as it runs down the slope, and the engineered structures (contour terraces -banks) that enhance the loss of water from land and that degrade overtime.

Above is a vetiver hedgerow in Fiji on a 20% slope that has over 30 years trapped soil to create a terrace riser that is 2 meters high and is completely stable.

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Vetiver hedges grown on black clay soil and red soils in India. Both sites are relatively flat, but both trap sediment and over time build up terraces. The top photo shows a meter wide band of crop residues behind the hedge indicating that run off water is spread evenly behind the hedge.

The farmers in the bottom photo have used vetiver for generations as a soil conservation measure, for forage, and for field boundary demarcation. This bottom hedge is about 10 years old, has hardly spread and is cut monthly for forage

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Vetiver has been used in most African countries - here Ethiopia (top), Malawi (bottom). Research in Nigeria clearly shows that significant reductions in soil loss (up to 90%) an rainfall runoff reduction (up to 70%) when vetiver hedgerows are planted on farm land. In addition crop yields significantly increase by as much as 40%. This is due to improved soil moisture and nutrient status of the soil. It has also been demonstrated that in the case of maize and sorghum vetiver has a negative impact on some insects, such as stem borer. Thus enhancing yield and income. Vetiver leaves can be cut and used both for forage, mulch, thatch, compost and for handicraft material.

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Vetiver hedgerows protect the slopes in Thailand (above) and panama (below). In Senegal it has been found that when banana's are grown in association with vetiver grass yields increased due to increased soil moisture and reduction in the nematode - root eelworm

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Vetiver hedgerows can be used for erosion control on large commercial farms. Top right: on nearly flat land this hedge has significantly reduced erosion off this black soil Darling Downs, Australian farm. Note in the bottom picture the sediment that collects behind these hedgerows. On the right is a citrus farm in south China protected with vetiver hedgerows on pH 4.5 red soils. The leaves are used for mulch and have shown to quickly improve soil organic matter and soil nutrients.

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Additional Information:

Soil and Water Conservation Photo album

Soil and Water Conservation Papers

Vetiver Grass - A hedge Against Erosion (English)

Vetiver Grass - A hedge Against Erosion (French)

Vetiver Grass - A hedge Against Erosion (Spanish)