Vetiver System - A Green Investment for Sustainable Development and Disaster Mitigation.

An Overview

THE VETIVER NETWORK (INTERNATIONAL)
THE VETIVER SYSTEM

A “green” technology that is low cost, easy to use, and it works

Used for:

- Soil and Water Conservation
- Infrastructure Stabilization
- Flood Control
- Water Quality Improvement
- Pollution Control
- Land Rehabilitation
- Disaster Mitigation
- Handicrafts
- Many other uses

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THE PLANT
Vetiveria zizanioides

Australia - Queensland
Malaysia - close up
Clump grass
Costa Rica

THE VETIVER NETWORK (INTERNATIONAL)
China - excavated root. Average tensile root strength 75 MPa

Malaysia - longitudinal section through hedge note the root mass in the top meter of the soil profile. This type of root mass will improve soil shear strength by up to 39%
Grows under extreme and wide range of conditions:

Long Living Perennial Grass
Air temperatures: -14 °C to >55 °C
Soil pH from <3 to >10
Annual Rainfall 300 mm to > 5,000 mm
Tolerant to all heavy metals
Saline tolerant
Fire tolerant
Few Pests and diseases
Powerful (75 MPa root strength) and deep root system
Non competitive and non invasive
THE VETIVER GRASS TECHNOLOGY

The basic technology comprises a hedgerow of vetiver grass planted on the contour.

Malaysia - 30 month hedgerow planted on the contour

Malaysia - close up hedge cross section
PROPAGATION

Vetiver grass cultivars originally from South India are sterile and non invasive. It is these types that are used for the Vetiver System.

Vetiver is propagated by root division. If large quantities of plant material is required nurseries have to be established.

China - 20 ha nursery - bare rooted plants
Malaysia - containerized vetiver nursery

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PLANTING

Mexico - Planting by hand

India - Preparing planting material

Australia - machine planting. Modified vegetable planter

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VETIVER SYSTEMS FOR SOIL AND WATER CONSERVATION

Columbia - CIAT vetiver - cassava trial on a steep slope

El Salvador - hillside conservation

Costa Rica - vetiver used to protect tobacco crop

Malawi - erosion control on maize field

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VETIVER SYSTEMS FOR SOIL AND WATER CONSERVATION

Panama - vetiver hedge on a steep slope in Chiriqui. Prior to vetiver these fields were subject to serious land slip.

Madagascar - sediment from cropped field filtered out by vetiver hedgerow. Eventually natural and stable terraces will be formed behind the hedgerow.
VETIVER SYSTEMS FOR SOIL AND WATER CONSERVATION

Thailand - vegetable crops in the highlands protected by vetiver

China - VS for wind erosion control

Congo (DRC) - a reshaped urban gully about to be stabilized with vetiver grass

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VETIVER SYSTEMS FOR INFRASTRUCTURE STABILIZATION

Vietnam - Ho Chi Minh Highway - with and without vetiver

Vietnam - Ho Chi Minh Highway Completely stable and cyclone proof
Thailand - fresh and salt water fish and prawn ponds are protected with Vetiver

Vietnam - Vetiver stabilizes this irrigation canal
Australia - even on flat land there can be serious erosion.
- a long vetiver hedgerow protects a field from flood damage.

Vietnam - forty provinces are now using vetiver to stabilize sea dykes against cyclone created storm damage

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VETIVER SYSTEMS FOR LAND REHABILITATION

Venezuela - rehabilitation of bauxite mine using Vetiver Systems - reducing the flow of heavy metals from entering surface water supply

Australia - gold mine slimes dam protected by vetiver, preventing wind blown cyanide soil particles
VETIVER SYSTEM FOR POLLUTION CONTROL

Vetiver was grown in the left hand beaker. After 4 days it reduced nitrates by 94% and Phosphates by 90%.

In Vietnam and China floating rafts of vetiver have been used to help clean piggery effluent ponds.

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Disasters caused by flooding create havoc for communities, and most often results in loss of life and income. The Vetiver System can prevent such disasters and also help stabilize landscapes and infrastructure after disasters.

Vetiver System is particularly good in reducing landslides, highway collapse, building collapse, river levee breeching, and other damage due to heavy rains and flood.
VETIVER SYTSTEM FOR LANDSCAPING

Vetiver was used to stabilize and reduce pollution on this hotel beach front in Senegal and to create a basis for landscaping. Top left: before
Bottom left: six months after planting vetiver grass

India: coastal stabilization

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VETIVER SYSTEM FOR OTHER USES

Handicrafts
Building materials
Medicinal
Fuel
Ethanol
Aromatic oil
Water purification
Paper
Mulch
Insect Control
Forage
THE VETIVER NETWORK

VETIVER SYSTEM

Web site:
http://www.vetiver.org/

Blog Site:
http://vetivernetinternational.blogspot.com

Photo Gallery:
http://picasaweb.google.com/VetiverNetwork

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