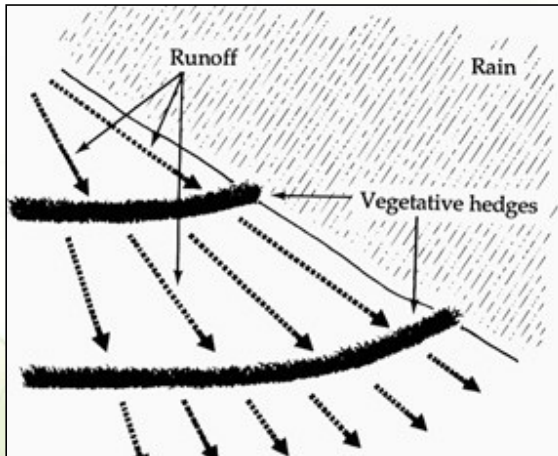


The Vetiver Education and Empowerment Project (VEEP) for Paramin - 2016

VEEP Course Workshop #1

Introduction to the Vetiver System (VS), Water Management, Land Preparation, Installation and Maintenance

Monday August 22nd 2016





VEEP Course Workshop #1 – Monday August 22nd 2016

1. Introduction to the Vetiver System (VS)
2. Importance of Water Management and Impact of Water on Property
3. Land Preparation for Installation
4. Vetiver System Installation
5. Maintenance during establishment
6. List of dates of remaining presentations & dates for VEEP project

INTRODUCTION TO THE VETIVER SYSTEM

THE VETIVER SYSTEM refers to the BEST PRACTICE METHODS for the use of vetiver grass as a tool in **sustainable development**

For land related activities, especially on agricultural or residential lands, this means:

- To slow down and halt erosion processes where it has already occurred and to begin repairing already eroded land***
- To provide stability to land which has shown a tendency to slip***

INTRODUCTION TO THE VETIVER SYSTEM

For land related activities, especially on agricultural or residential lands, this means:

- To create continual hedgerows on contour – eye-level “A-frame”, which when established will completely break the flow of water and cause it to spread over a very wide area and continue running off in a slow, controlled and spread out way*
- In doing so, to keep water on the land for longer, but in a very gentle and controlled way, which allows more water to percolate into the soil, and improve soil moisture, over time actually raising ground water levels*

INTRODUCTION TO THE VETIVER SYSTEM

For land related activities, especially on agricultural or residential lands, this means:

- To help build back up the water table over time, which is actually what is responsible for allowing rivers to keep flowing in the dry season*
- To create safer walking pathways, by stabilizing the lower edge of the walking path to prevent slippage and erosion and to create a strong, safe barrier – which can also catch falling fruit*
- To provide useful mulch (leaves) which can be spread on the ground between crops to keep moisture, become green manure, and keep down weeds*

INTRODUCTION TO THE VETIVER SYSTEM

For land related activities, especially on agricultural or residential lands, this means:

- To capture valuable topsoil normally washed away by erosion*
- To help control soak-away systems by absorbing all remaining liquid, and also creating a curtain of roots under the ground to absorb soak-away liquid at deeper levels and prevent it from flowing downstream*
- To protect the edges of concrete infrastructure like roads, houses, walls, etc, that are experiencing erosion around them and can risk falling down eventually*

INTRODUCTION TO THE VETIVER SYSTEM

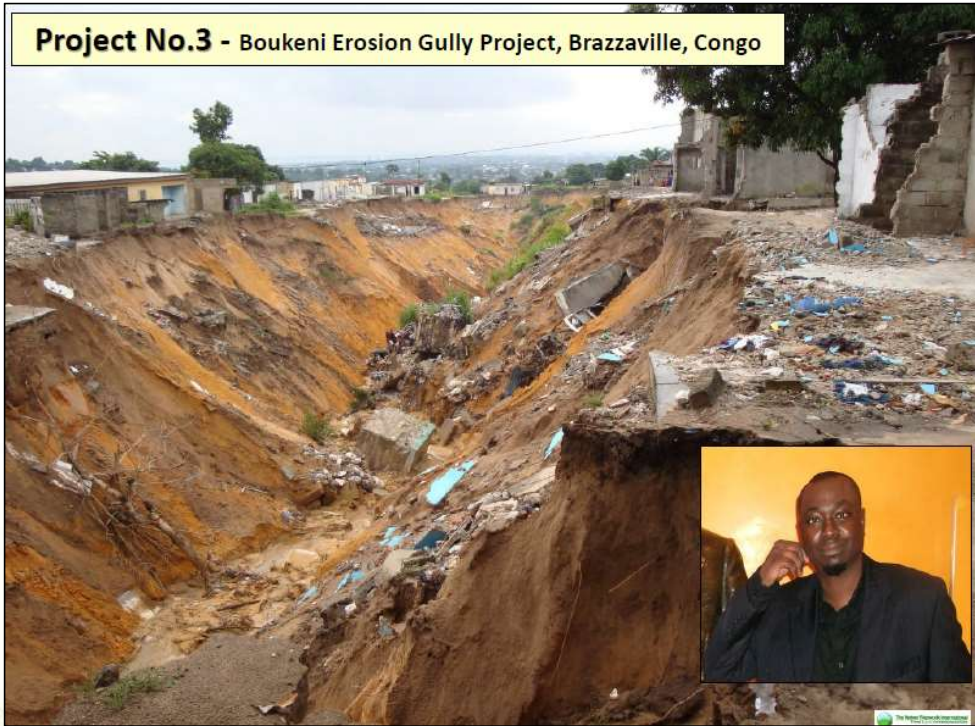
Deep and Penetrating roots: One year old plant with 3.3m deep root system in China and Thailand.

Vetiver roots have the tensile strength of 75 Mpa, equivalent to 1/6 strength of mild steel reinforcement.

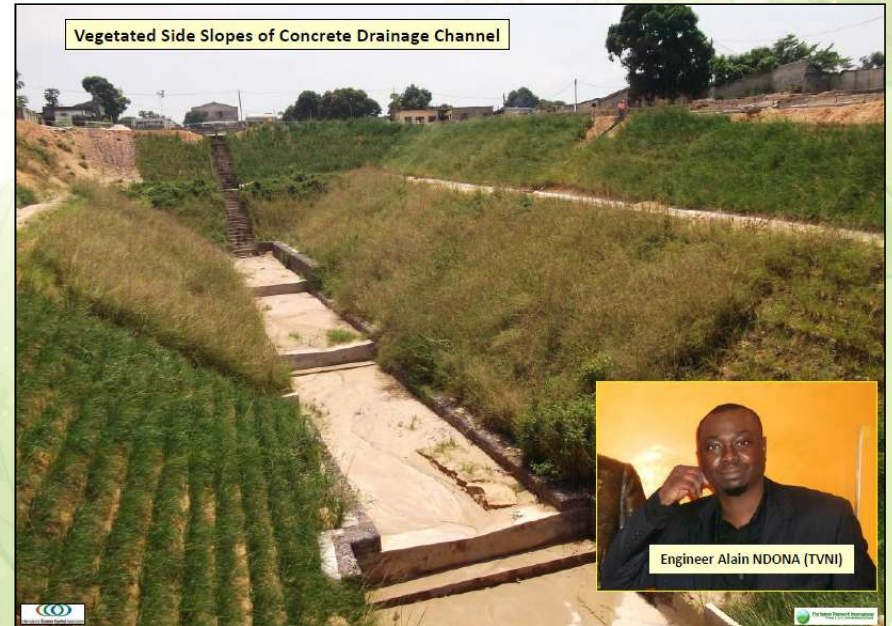


INTRODUCTION TO THE VETIVER SYSTEM

Project No.3 - Boukeni Erosion Gully Project, Brazzaville, Congo

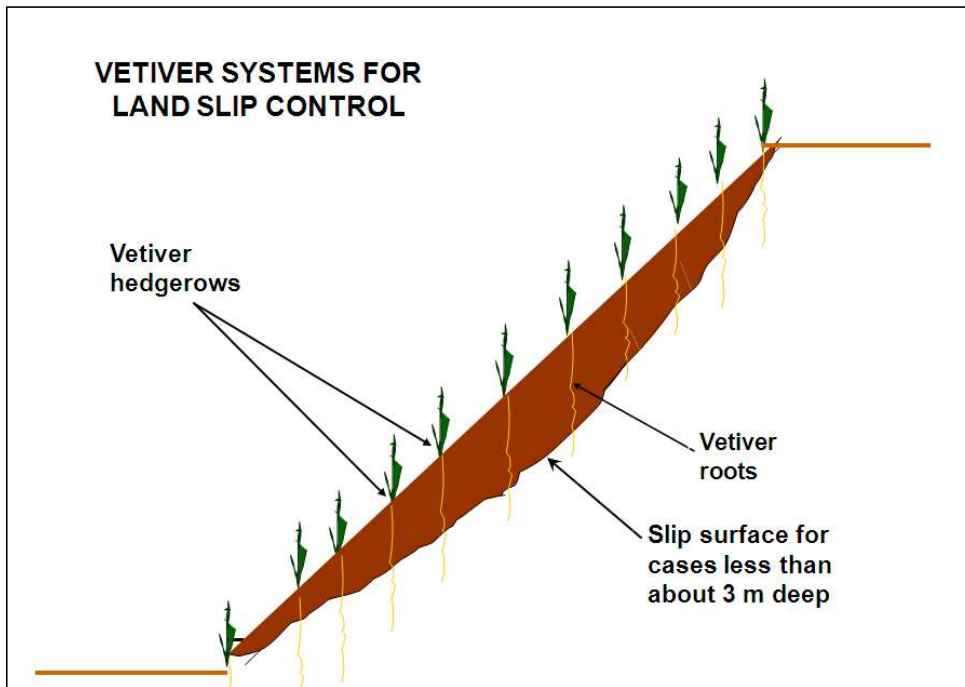


Vegetated Side Slopes of Concrete Drainage Channel

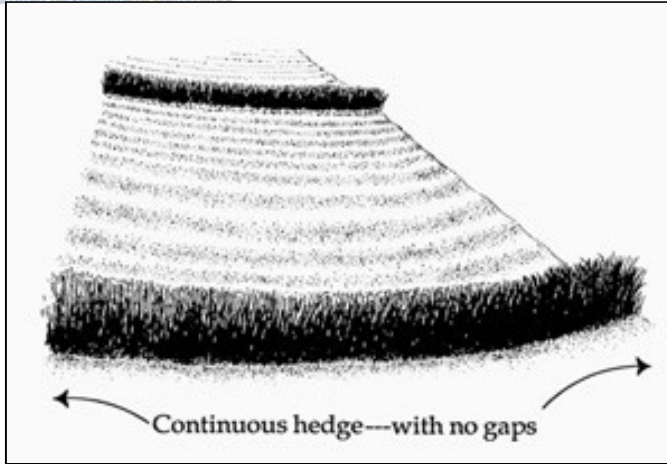


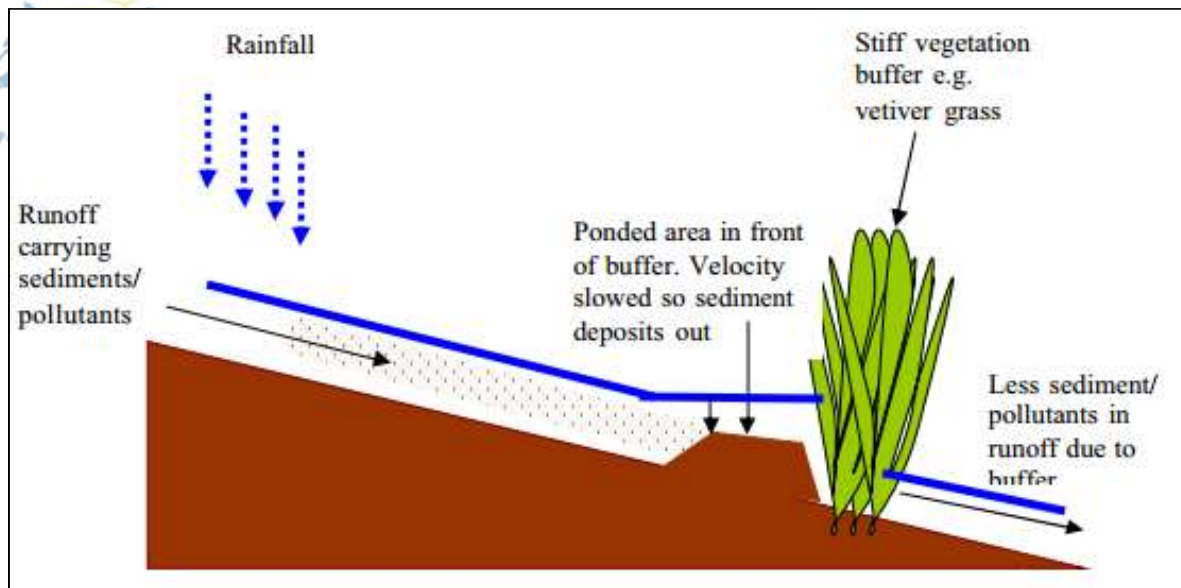
Engineer Alain NDONA (TVNI)

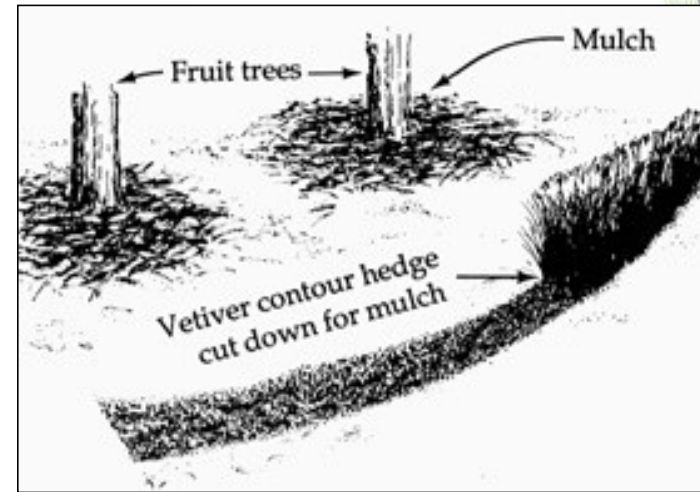
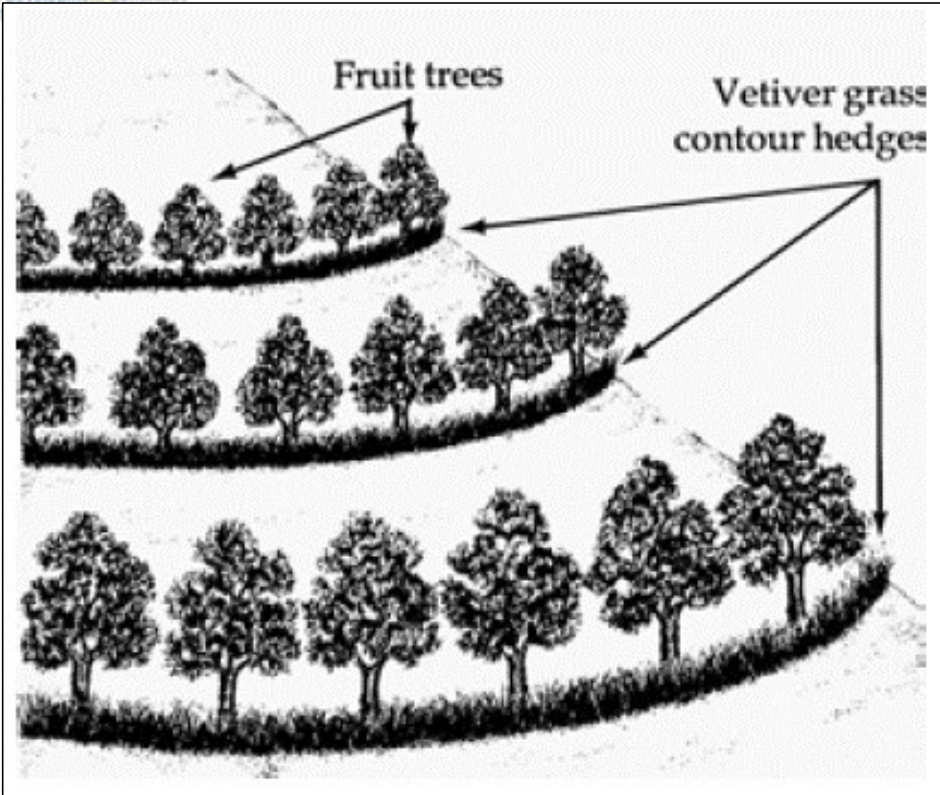
INTRODUCTION TO THE VETIVER SYSTEM



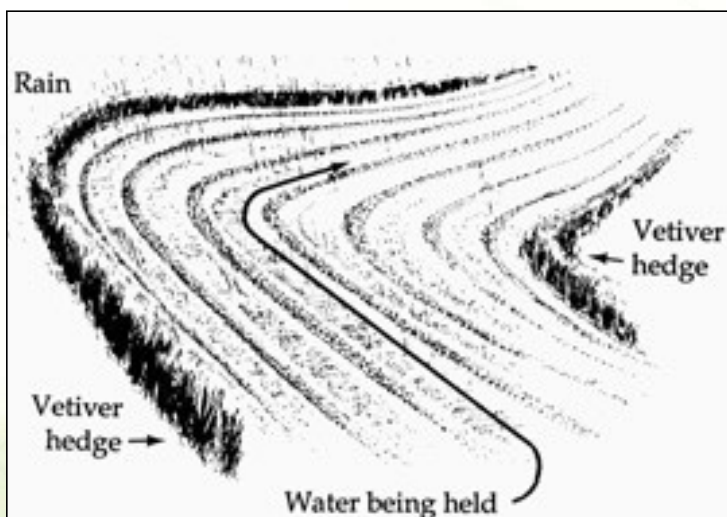
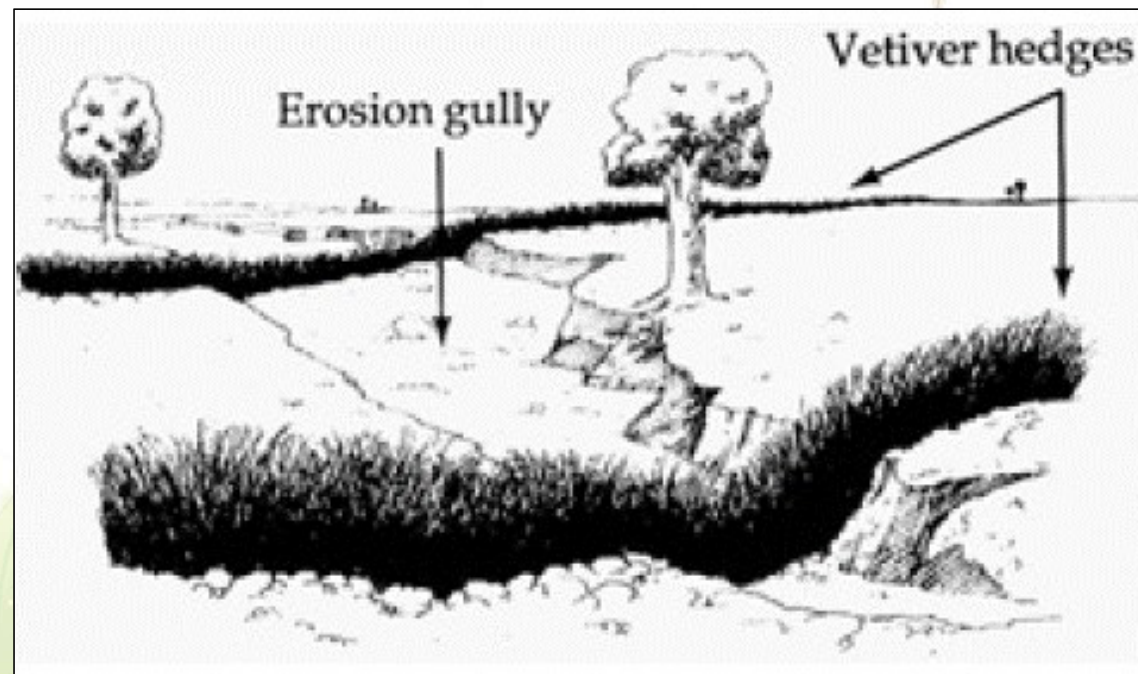
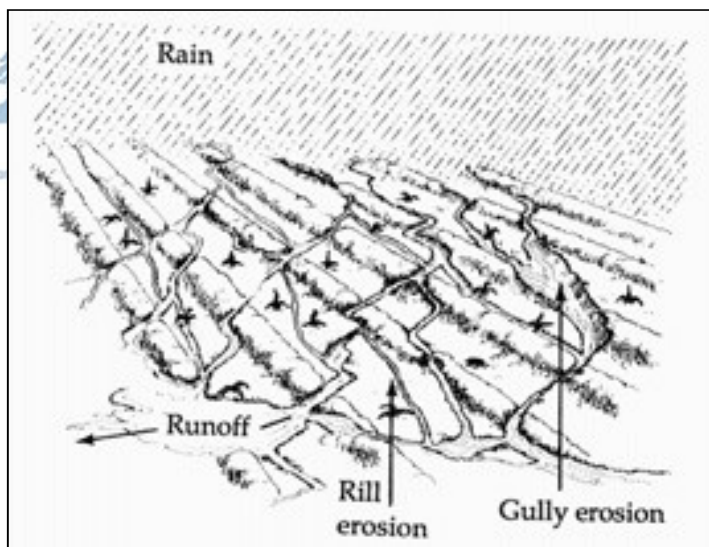
INTRODUCTION TO THE VETIVER SYSTEM



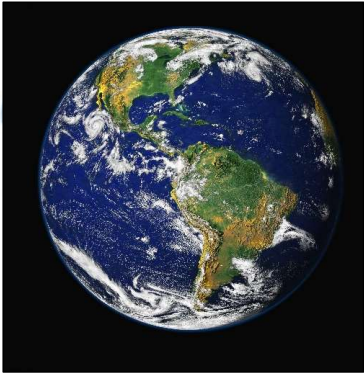




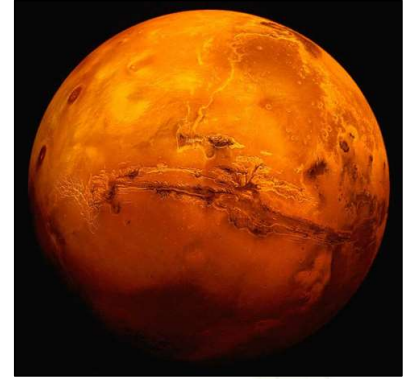
REPAIRING EROSION GULLIES AND PREVENTING FUTURE ONES



DISTRIBUTING WATER EVENLY ON THE LAND

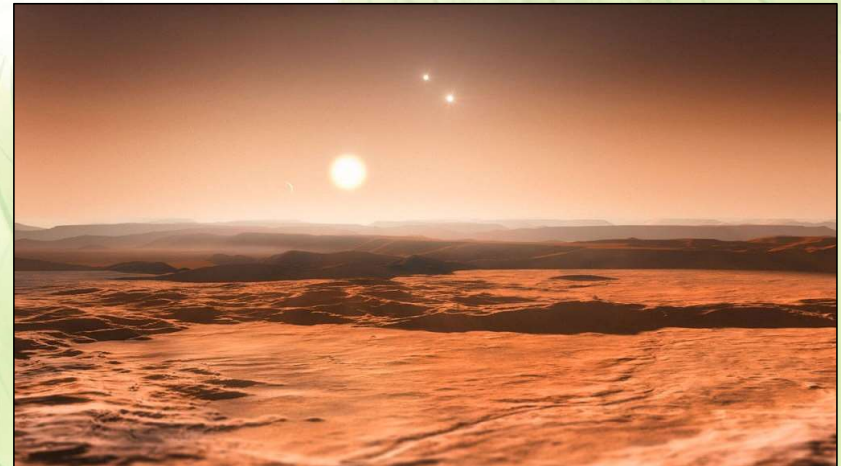


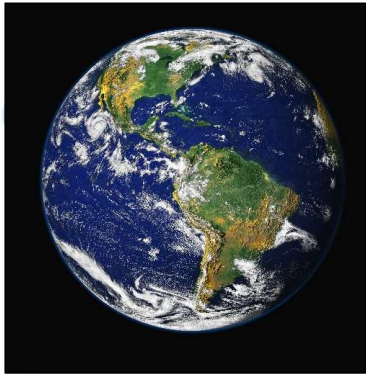
***WATER IS ONE OF THE MOST VALUABLE RESOURCES
WITHOUT IT, WE WOULD BE LIVING ON MARS***



**We all know that the reality about water
controls a lot of things**

- ✓ **We have a rainy season during which we can plant**
- ✓ **And a dry season during which we can't plant because nothing will grow**





Doesn't it make sense to develop a good relationship with water?



The knowledge is available. However if it's not made use of correctly, this is what a bad relationship with water can look like, and which we are all familiar with:



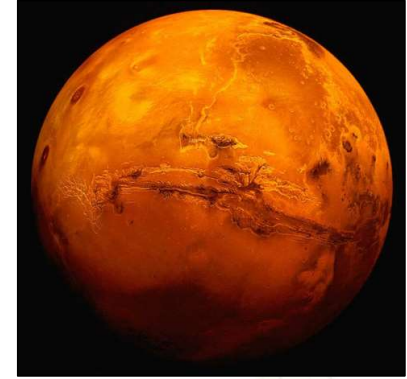
Unprepared for the extremes



TOO MUCH



TOO LITTLE



GOOD WATER MANAGEMENT

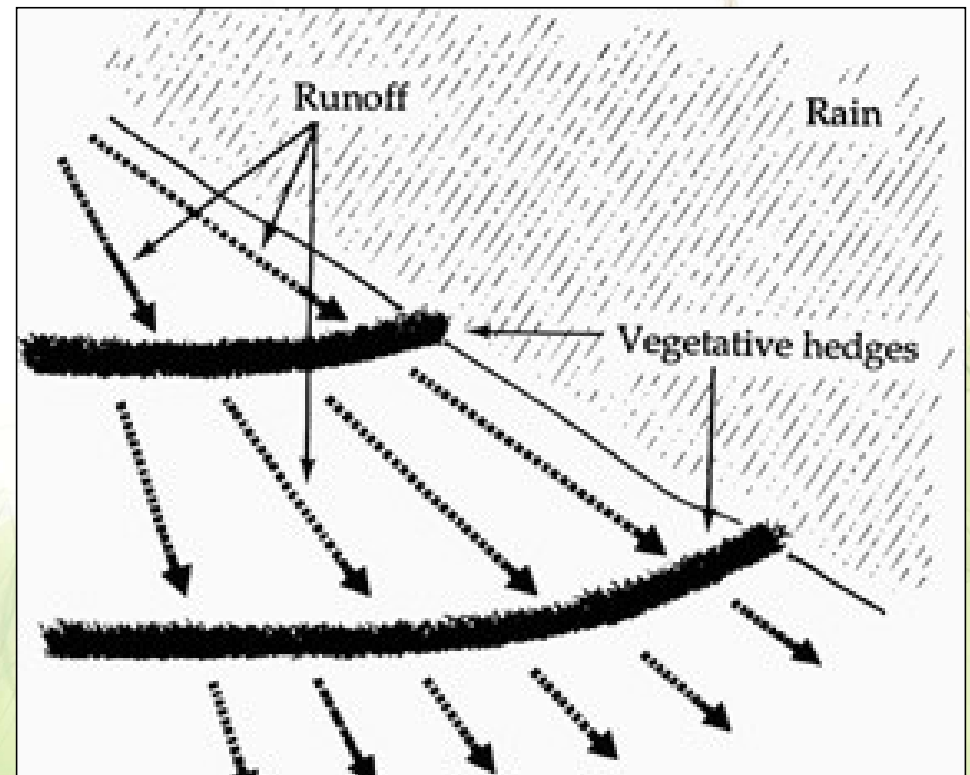
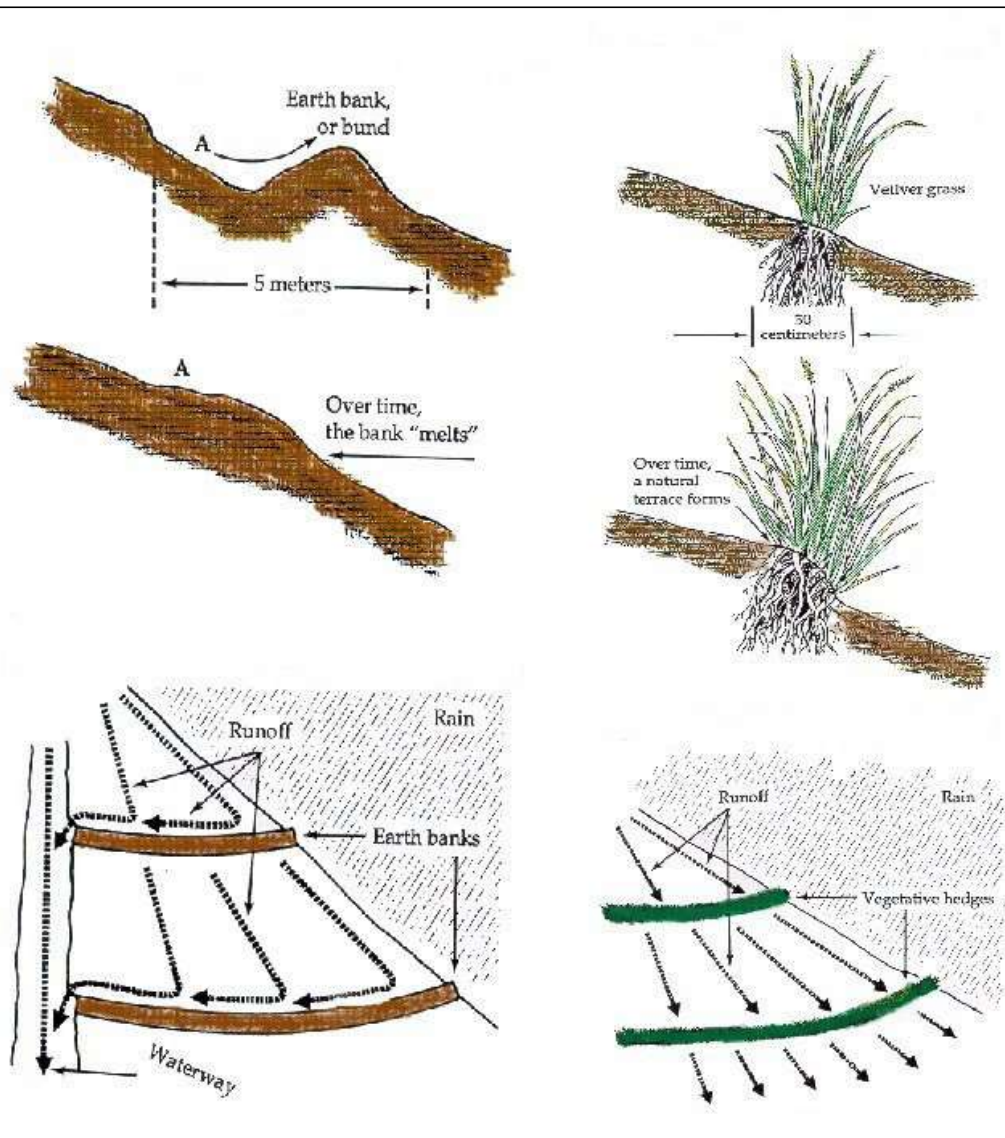
*For hillside communities, and especially farmers,
good water management means:*

- ✓ *Managing the flow of water to prevent damage to land and property*
- ✓ *Retaining water on the land as much as possible in a safe way, to build back soil moisture, ground water, and prevent its constant rapid loss running off very quickly into rivers and the ocean*

WATER

IF NOT MANAGED RIGHT, CAN BE SO DAMAGING

IF MANAGED RIGHT, CAN BE SO GOOD



← FROM SEVERE
EROSION AND
SLIPPAGE



Land slippage and erosion due to heavy rainfall - Ethiopia, Africa

TO NATURAL
TERRACES →



Natural terracing which has occurred over time behind a vetiver hedgerow, due to soil conservation - Ethiopia, Africa





WATER MANAGEMENT DURING VETIVER ESTABLISHMENT



DURING



3 MONTHS



LAND PREPARATION for INSTALLATION

In cases of fully overgrown land full of “bush”, this must be properly removed. Because of the way glyphosate kills all living things in the soil and stays there for a long time, and is harmful to vetiver grass, it is not recommended. Instead:

- ✓ *Chop or weed-wack to the ground and remove cut bush*
- ✓ *If needed, spray with Carista mixed with Breakthru (sticker)*
- ✓ *Leave for 3 days*
- ✓ *Use shovel to scrape off top vegetation just where plants will be installed*

If land is already cleared and there is no existing major vegetation, just small weeds, then no additional land preparation is needed.

LAND PREPARATION for INSTALLATION



**Clearing:
Vetiver doesn't
grow well in
shade – need to
remove
competition for
young plants**



VETIVER SYSTEM INSTALLATION



Vetiver Plants Preparation

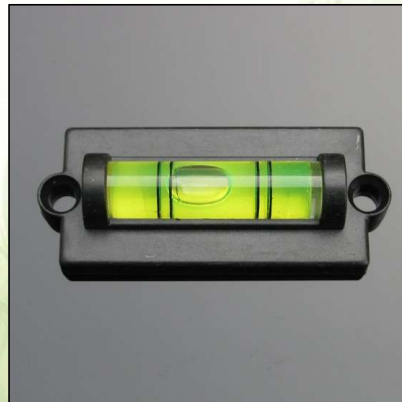




VETIVER SYSTEM INSTALLATION



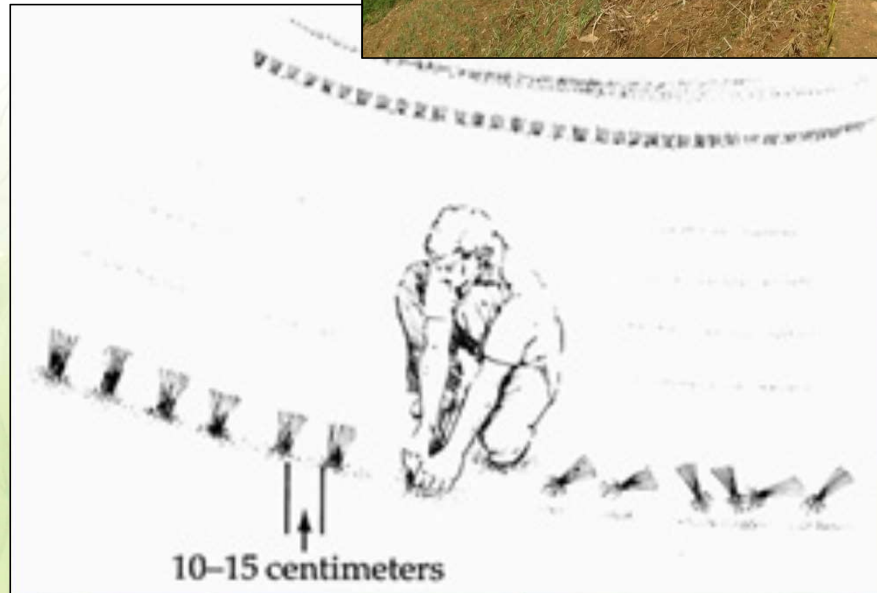
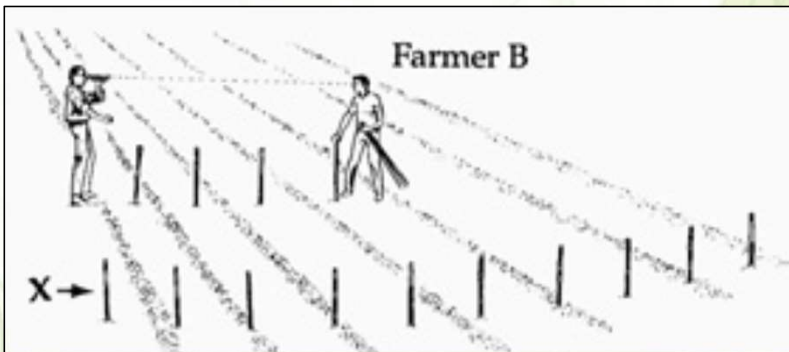
*Using an
A-Frame*



VETIVER SYSTEM INSTALLATION



- Install plants
- ✓ 10 cm apart
- ✓ On contour



VETIVER SYSTEM INSTALLATION - NURSERY

For Nursery installations to multiply vetiver stock – plants are not planted on contour and so close together. Plants can be installed at a distance of about 2 to 3 ft to give each plant a chance to grow out well forming large clumps, which can then be split into many new plants. A mature clump can produce over 100 new plants





FERTILIZING AND MAINTENANCE



To promote speedy growth some fertilizers which can be used are:

- ✓ Liquid Litter
- ✓ Phortify
- ✓ BIO-20
- ✓ Root growth hormone
- ✓ Agrical – to improve the soil
- ✓ Bountiful Harvest – to improve soil quality
- ✓ Bio-bug – to improve soil quality and living matter in the soil

FERTILIZING AND MAINTENANCE

During the short term while plants are establishing, need to control overgrowth. This can be done through:

- ✓ **Manual removal/weeding**
- ✓ **Spray along edges using *Carista* and *breakthru* – and a shield if needed**

- ❖ **When the hedgerow is formed after several months it will be big and strong and can hold back weeds from edges**
- ❖ **Very important not to spray with Glyphosate which will kill it**
- ❖ **Because vetiver grass does not spread and does not produce seed, if you kill it completely it will not come back**

VEEP LAND PROJECTS THIS WET SEASON

Being completed August – November 2016

- ❖ ***2 projects completed – Shurland & Roger***
- ❖ ***10 more projects to be installed – this week Klem & Martin***
 - ❑ *In September – Cheryl, Grey Duck, Tony, Deon*
- ❖ ***4 nurseries to be installed – this week Nursery #1 - Shurland***

LIST OF DATES FOR REMAINING IN-HOUSE PRESENTATION WORKSHOPS

- ❖ **Monday September 5th** - Capacity Building and Community Workshop for Project Participants – *lead by Ms. Nakita Poon Kong*
- ❖ **Monday September 19th** - The Vetiver Institute Course & Activities – Plant Preparation & Introduction to Nurseries, and other helpful tree species for serious problems
- ❖ **Monday October 3rd** - Nursery Management in the long term, business opportunities
- ❖ **Monday October 17th** - The Vetiver System for Soil and Water Conservation, Mulching & Topsoil Rebuilding, and Organic Farming Practices; Water Treatment and Soak-aways
- ❖ **Monday October 31st** - Other Vetiver Uses, Infrastructure & Road Protection, projects maintenance, long term community vision – Looking Forward: Creation of the Educational Brochure, Documentary & Closing Event

LIST OF DATES FOR HANDICRAFT COURSE WORKSHOPS

Class	Date	Time	ACTIVITY
Class 1	Wednesday September 7th	5:30-7:30pm	Introduction to metiver/vetiver craft, materials, preparation & techniques Begin plaiting – small plaiting technique
Class 2	Wednesday September 14th	5:30-7:30pm	Small baskets – using small plait from previous class
Class 3	Saturday September 17th	4:30-6:30pm	Harvesting and leaf preparation – <i>field trip</i>
Class 4	Wednesday September 21st	5:30-7:30pm	Large plaiting technique
Class 5	Wednesday September 28th	5:30-7:30pm	Small simple round mat – using large plait from previous class
Class 6	Wednesday October 5th	5:30-7:30pm	Creating patterns on mats
Class 7	Wednesday October 12th	5:30-7:30pm	Using templates
Class 8	Wednesday October 19th	5:30-7:30pm	Soap Making
Class 9	Wednesday October 26th	5:30-7:30pm	Roots – harvesting, preparation & presentation
Class 10	Wednesday November 2nd	5:30-7:30pm	Starting a metiver/vetiver craft business



Thank You for participating in
VEEP Course Workshop #1!

See you again soon on
Monday 5th September @ 6pm
for Capacity Building and
Community Workshop – *lead by*
Ms. Nakita Poon Kong