

THE VETIVER SYSTEM

COMMUNITY DEVELOPMENT AND POVERTY ALLEVIATION OPPORTUNITIES THROUGH THE USE OF THE VETIVER SYSTEM



AN ESSENTIAL TECHNOLOGY FOR AFRICA

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Vetiver Hedgerows if applied widely in rural areas and watersheds would for farmers:

A: RESOURCE AND INFRASTRUCTURE PROTECTION

1. Reduce soil loss by up to 90% and rainfall runoff by up to 70%
2. Reduce nutrient losses and improve soil moisture - up to 50 crop yield increases
3. Improve soil moisture, reduce impact of drought, increase crop yields
4. Improved survival and growth of planted trees by as much as 80%
5. Improve groundwater, stream and spring flow, regeneration of wetlands
6. Improve water quality and reduce pollution by containment and treatment of waste
7. Protection of farm canal, drains, roads, and buildings - reduced maintenance costs
8. Flood protection





Vetiver Hedgerows if applied widely in rural areas and watersheds would for farmers:

B: Direct farm and farm family benefits

1. **Mulch:** long lasting mulch - enhances soil moisture, organic matter & nutrients
2. **Forage:** High yielding (up 70 tons dry matter/ha) if managed and cut regularly
3. **Thatch and rope:** thatch lasts much longer than most other thatching material
4. **Fuel:** Mature grass has a high energy value. It has potential as a community energy source
5. **Pest control:** Push pull maize/ sorghum stem borer reduction
6. **Handicraft material:** Vetiver leaf makes excellent handicrafts
7. **Vetiver Plant Propagation:** sale of plant material for use off the farm - highly profitable
8. **Medicinal uses:** wide range of medicinal uses for internal and external purposes





Vetiver Hedgerows if applied widely in rural areas and watersheds would for Communities:

1. Improve the quantity and quality of drinking water (can be further improved by adding a few Vetiver roots – taste and antiseptic).
2. Improve community health - waste water treatment, stabilization of rubbish dumps – reduced fly incidence, elimination of odors, and removal of BODs, heavy metals, reduced health risks.
3. Stabilization of community infrastructure - roads, canals, levees, river banks. building sites
4. Communal and wasteland protection and rehabilitation
5. Soil and water conservation application for new community forests – better tree growth
6. Atmospheric carbon sequestering and carbon credits
7. Biofuel for community energy production
8. Community handicraft programs.





All the above can be achieved with very little effort if the community as a whole is involved.

A farmer with 1 ha of land on a 20% slope would need to plant 17 rows equivalent to 1,700 meters (14,000 plant slips) of vetiver hedgerows, this would take about 10 man days of planting.

The extraordinary thing to note is that full introduction of a farm and community Vetiver hedgerow system would, result in nearly all of the above benefits being available to each farmer.



COMMUNITY VETIVER PROJECTS

Some Examples

- East Bali Poverty Project (Indonesia)
- Dabie Mountain Project and Guangxi Province Projects (China)
- Royal Projects Development Board Hill Tribe Projects (Thailand)
- Oaxaca Community Program (Mexico)
- Urban Community Rehabilitation of urban gullies (Democratic Republic of the Congo)
- Urban Community privacy hedge program in South African township
- Aceh urban sewage treatment program - 2000 homes (Indonesia)
- Community vetiver handicraft program (Venezuela)



EAST BALI POVERTY PROJECT

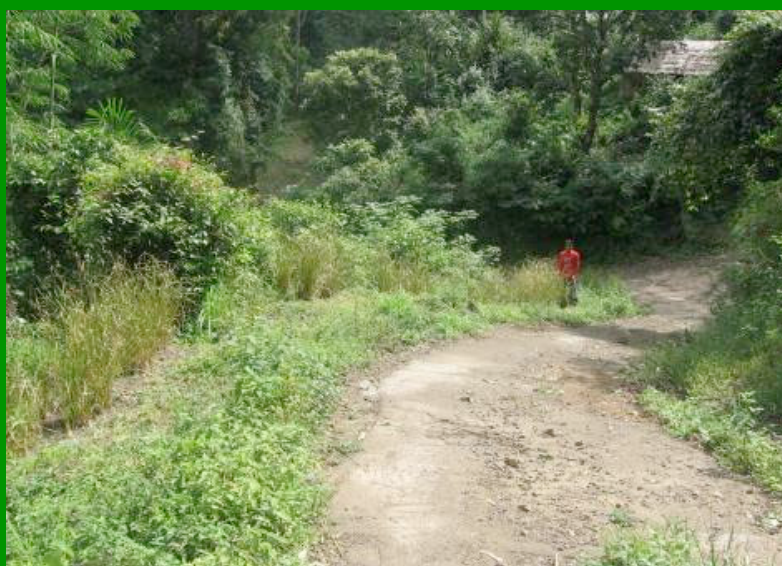


- Impoverished and illiterate people
- Poor health, malnutrition
- Failed agriculture
- Poor access
- Polluted and diminishing drinking water supplies
- eroded soils

THIS ALL CHANGES WITH
INTRODUCTION OF VETIVER
AND CHILDREN ARE EDUCATED



ACCESS ROAD STABILIZATION



Village access road before and after treatment with Vetiver



BUILDING SITE STABILIZATION, IMPROVED DRAINAGE



House and school sites stabilized with vetiver, no erosion, no land slides and safe buildings



PROTECTED AND IMPROVED WATER SOURCE



Spring head rehabilitation and permanent protection of important domestic water supply source for community. Top - before; below - after vetiver treatment



COMMUNITY VETIVER NURSERY

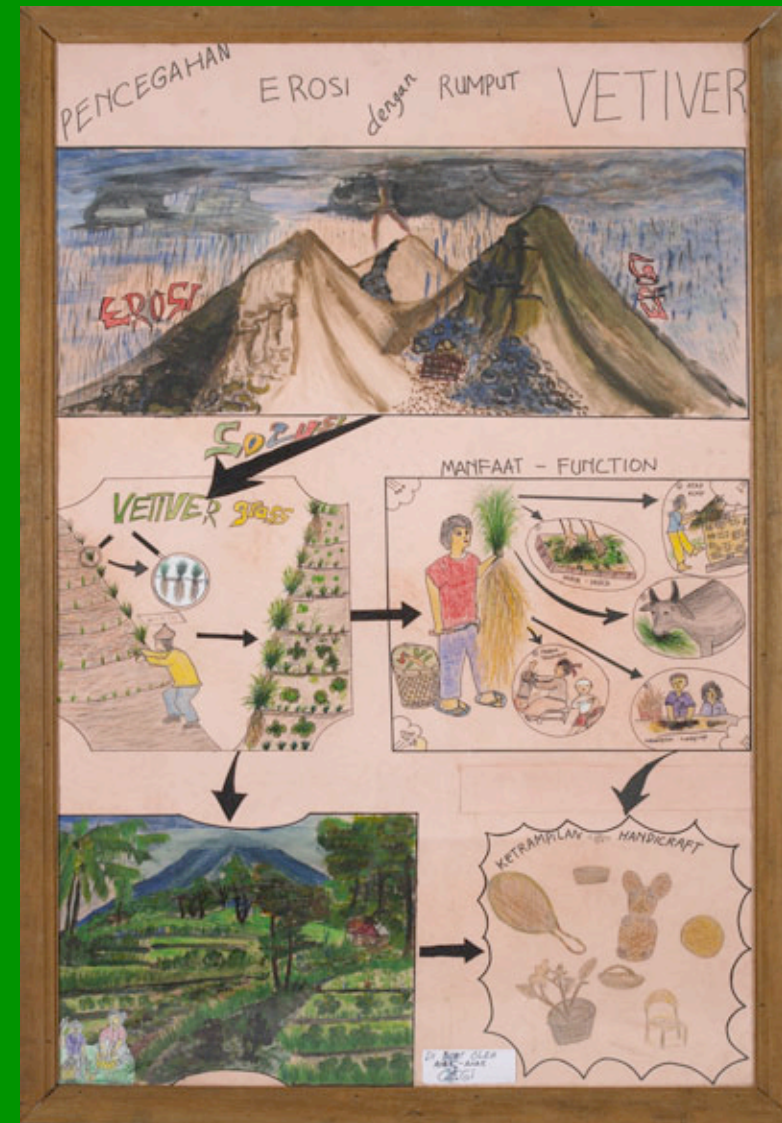
Note the steep slope typical of the whole project area that supports 11,000 people



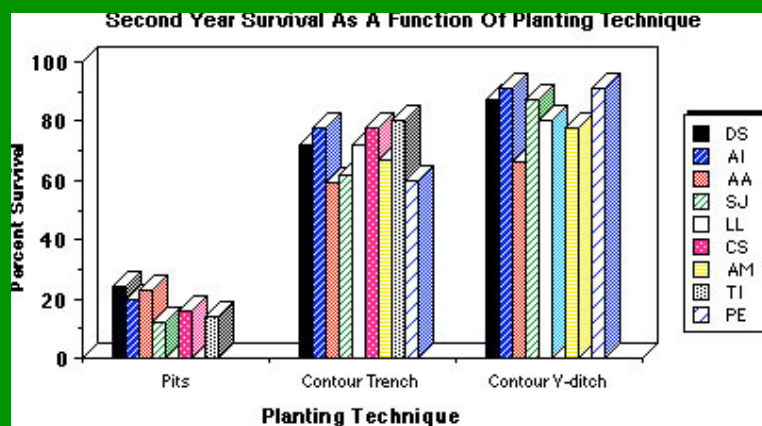
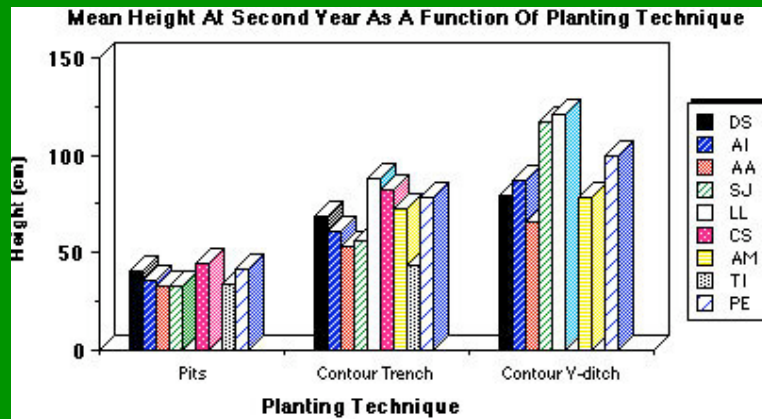
SIGNIFICANTLY IMPROVED CROP PRODUCTION AND MUCH HIGHER YIELDS WITH THE VETIVER SYSTEM



VETIVER SYSTEM CULTURE EMBEDDED IN SCHOOL CURRICULA



VETIVER AND COMMUNITY FORESTRY



- Improved tree survival from <20% to >90%
- Improved growth 40 cm to 140 cm



VETIVER SYSTEM FOR COMMUNITY WASTE WATER TREATMENT



- Floating vetiver (top left), root growth under floats (top right) - drain clean up
- Bottom left - community sewage treatment. Bottom right above ground tertiary sewage treatment



VETIVER SYSTEM FOR COMMUNITY LANDFILL AND RUBBISH DUMP STABILIZATION



- Upper and Middle left: Village rubbish dump - Morocco, covered with soil and planted to vetiver. Right: X - section through dump - vetiver roots penetrating rubbish.
- Left bottom: largest land fill in south China stabilized with vetiver



COMMUNITY PROJECTS IN THAILAND



Conservation and mulching



Livestock forage when cut regularly



Composting vetiver leaves



HILL AGRICULTURE THAILAND PROTECTED AND ENHANCED WITH VETIVER



H.M. The King of Thailand personally staked his reputation on the Vetiver System and spent millions of dollars on research





- Thai handicrafts made from vetiver leaves. These are very finely made



VETIVER FOR THATCH



Thatched roof in Thailand (left), and in Zimbabwe (below)



VETIVER ROOTS



- Vetiver grown for its roots can be grown as a harvestable crop or in large bags (above)

- Vetiver roots can be used for:
- Perfume (vetiver oil)
- Medicine
- Handicrafts
- screens



VETIVER FOR BUILDING AND MANUFACTURING



- Top left: Vetiver has been used to reinforce these bricks.
- Remaining images show the use of vetiver as a manufactured compressed board



VETIVER - A COMMERCIAL CASH CROP - PLANT MATERIAL



Large and small private nurseries sell bare rooted and containerized plants

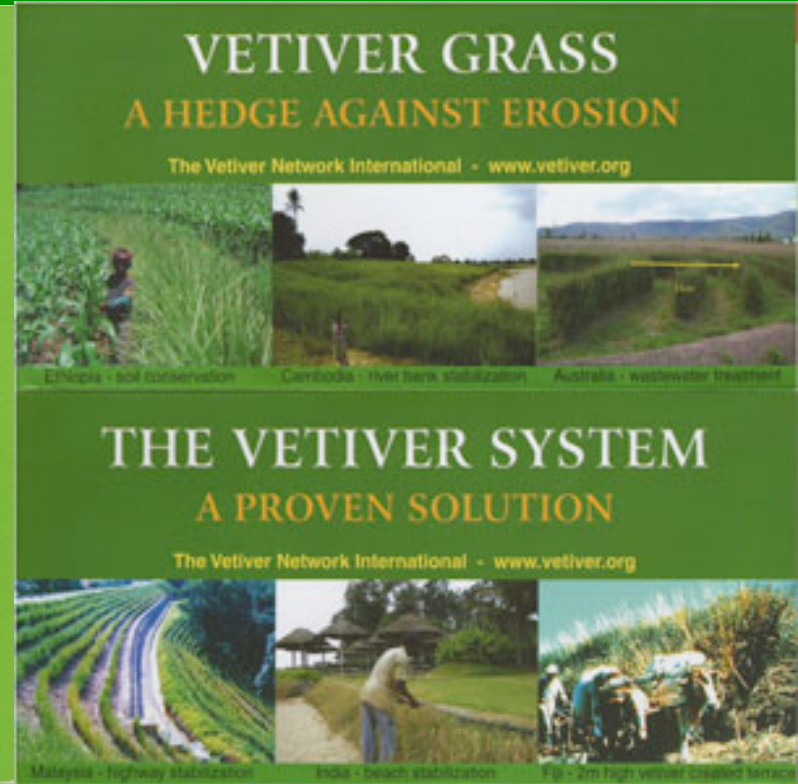
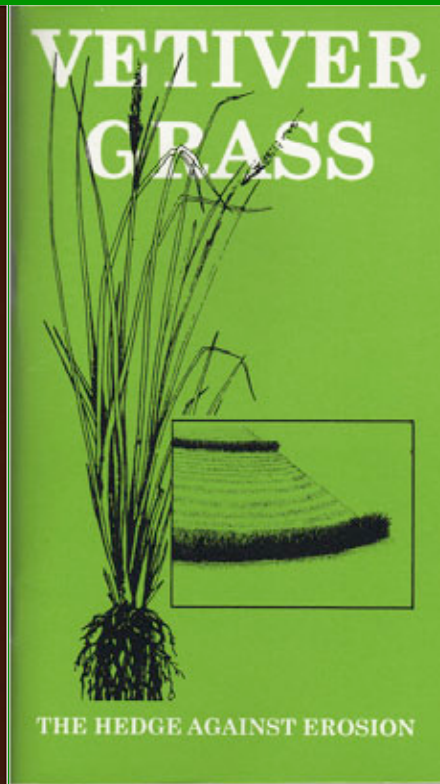
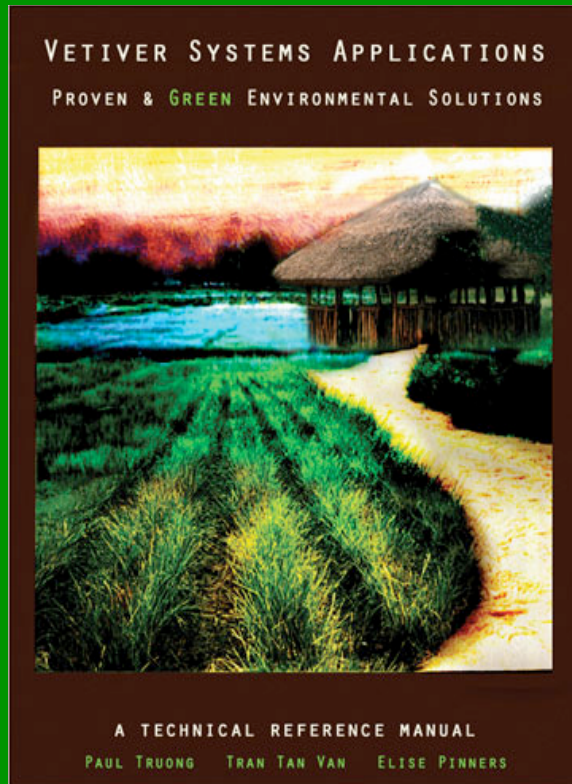


NEW POLICIES AND INITIATIVES ARE REQUIRED TO EXTEND THE USE OF THE VETIVER SYSTEM

- SCALE UP FROM EXISTING PROJECTS AND DEMOS TO COUNTRY WIDE PROGRAMS
- ACTIVELY INVOLVE PRIVATE SECTOR AND FARMERS, AS “INSTALLERS”, AND VETIVER PLANT PRODUCERS, BOTH AT SMALL AND LARGE SCALE
- COUNTRY WORKSHOPS FOR NATIONAL POLICY MAKERS AND LOCAL DEVELOPMENT AGENCIES (WORKSHOPS CAN HAVE EITHER MULTI SECTOR OR SINGLE SECTOR FOCUS)
- TRAINING OF TECHNICAL SPECIALISTS AT ALL LEVELS (INTRODUCTION OF VS TO SCHOOL AND UNIVERSITY CURRICULA)
- END USER TRAINING - INDIVIDUALS AND INSTALLERS
- DEVELOPMENT OF APPROPRIATE PUBLICATIONS, TECHNICAL MANUALS, AND CONTRACT SPECIFICATIONS. WHERE APPROPRIATE INCLUDE VETIVER SPECS IN ALL SOIL/WATER RELATED DESIGNS AND BIDDING DOCUMENTS
- COMMUNITY DEVELOPMENT PROGRAMS SHOULD INCLUDE VETIVER SYSTEMS APPLICATIONS
- DEVELOPMENT OF APPROPRIATE MARKETING SYSTEMS AND APPROACHES
- IN THE NON AGRICULTURAL SECTOR FOCUS INITIALLY ON HIGH PRIORITY AREAS OF POINT SOURCE EROSION AND POLLUTION



PUBLICATIONS



Publications are important product of the Network. Left: is the newly published technical manual (the Brown Book). Center: John Greenfield's handbook for farmers and agricultural extension workers (the Green Book). Right: TVNI's double sided brochure/poster (16" x 25"). Users are welcome to reprint, translate, and distribute them.



VETIVER SYSTEM



**A PROVEN AND GREEN
ENVIRONMENTAL
SOLUTION**

USE IT !!

