Contribuciones de la TPV en Venezuela y Latinoamérica a la conservación de los recursos naturales

VGT contributions to natural resources conservation in Venezuela and Latin America

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Latin America Vetiver Network LAVN

Venezuelan Vetiver Network VEVN

Introduction

- VGT is a proven technology for soil and water conservation
- Advantages:
  - Effective
  - Low cost
  - Survive extreme environmental conditions
  - Easy to apply
  - Not invasive
  - Adaptable to different land utilization systems
- Other uses: Bioengineering, phytoremediation, disaster mitigation, land reclamation and rehabilitation...
- Many utilization products and services

Introduction

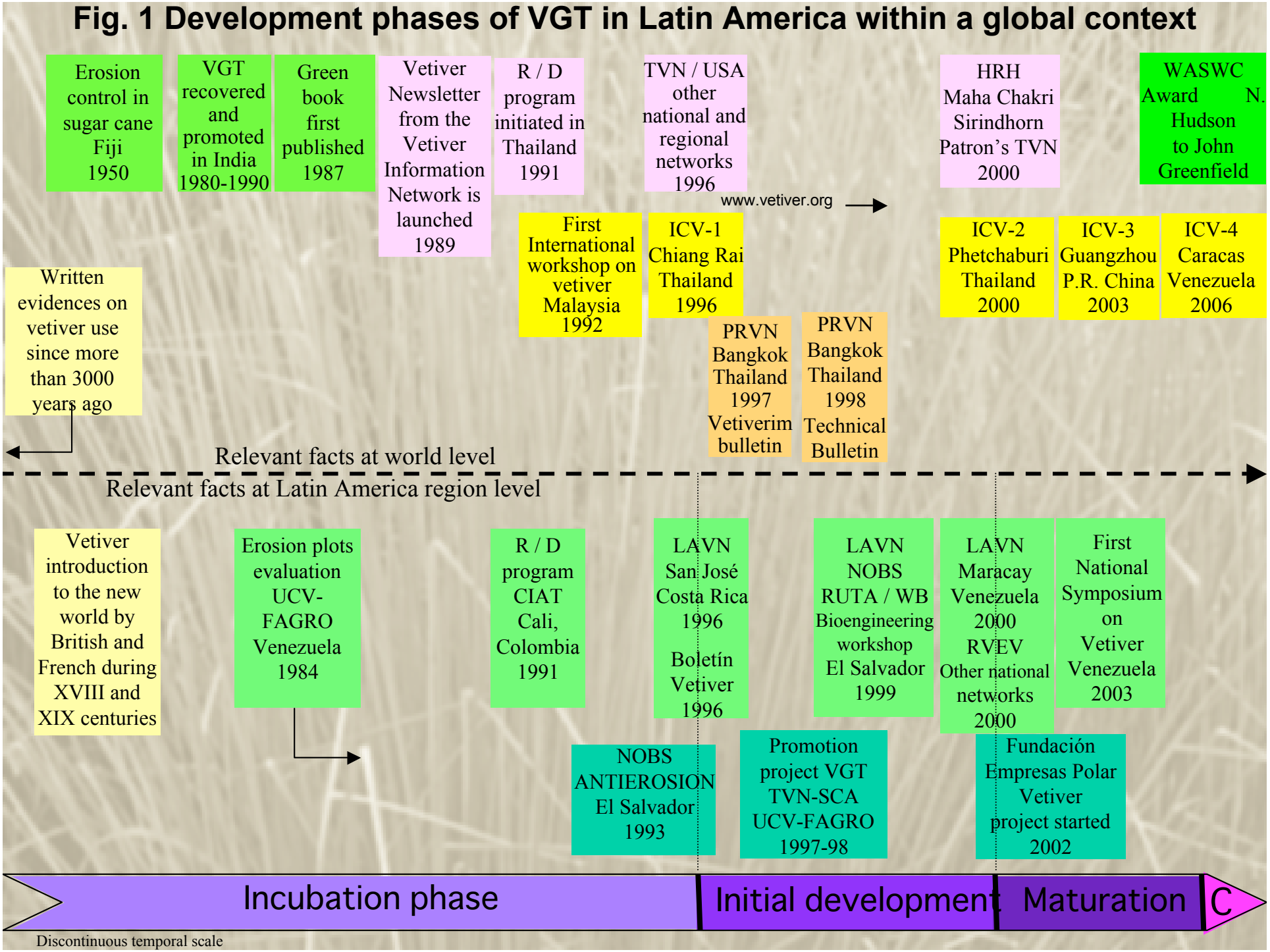
- VGT generates sustainable solutions that qualify for environmental, economic and social demands, being particularly useful for community development projects and poverty alleviation
- VGT has become a focus of interest in Latin America and many other regions of the world different from its place of origin

Introduction

VGT contributions to natural resources conservation in Venezuela and Latin America will be discussed according to:

- Historical perspective within the global and regional context of Vetiver relevant facts
- Research progress
- Practical experiences
- Promotion and networking
- Final remarks
- Acknowledgements

Fig. 1 Development phases of VGT in Latin America within a global context



Research on Vetiver in Venezuela and Latin America

- Natural and social conditions diversity require R/D programs to adapt, innovate and apply VGT based on its basic principles
- Research advances within the region have supported VGT applications despite some limitations.
- When needed, external research information has been used
- Research initiatives must be supported appropriately
- Main progresses:
  - Erosion control and agricultural impacts
  - Agroforestry component
  - Ecology, propagation, establishment, management
  - Phytoremediation and land reclamation and rehabilitation
  - Ecotypes collection

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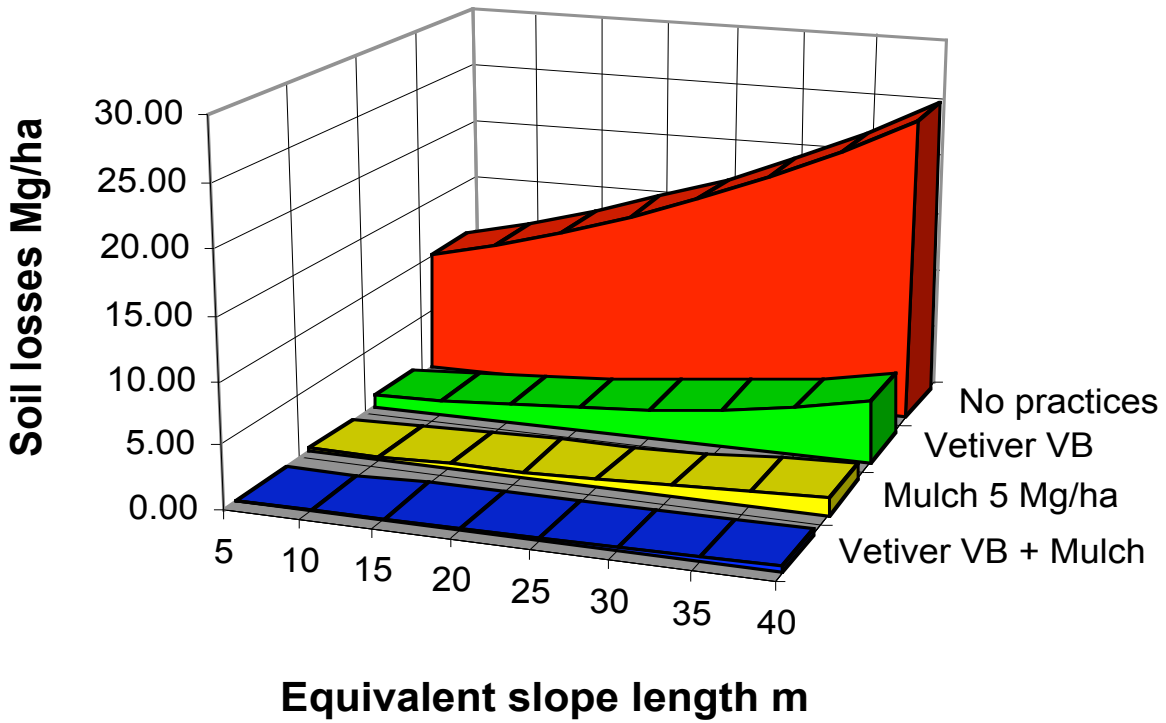

Combined vegetative barrier, residue level (5 Mg/ha) and equivalent slope length effects under simulated rainfall and very wet soil moisture condition on soil losses.
Rodríguez (1998)

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With barrier ← → Without barrier

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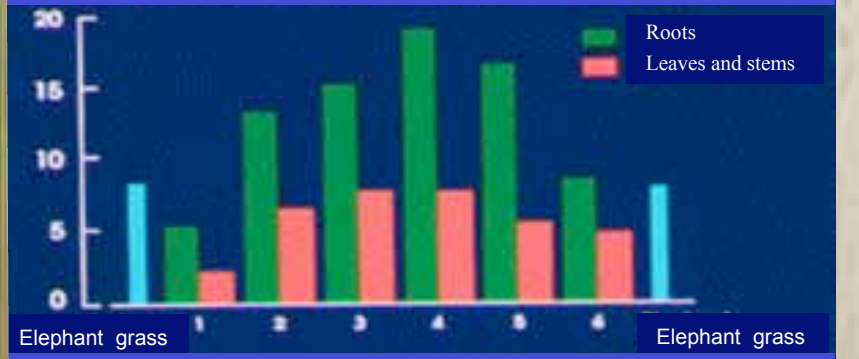
CIAT EXPERIENCE-IMPACTS OF VEGETATIVE BARRIERS ON CASSAVA YIELDS

Cassava / Vetiver grass hedgerow Yields per row (each row six plants) in kg of fresh roots and leaves and stems



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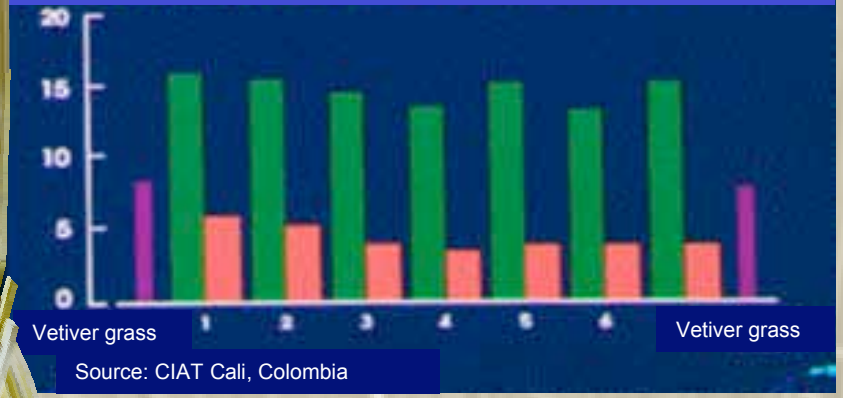

Source: CIAT Cali, Colombia

CIAT-Colombia

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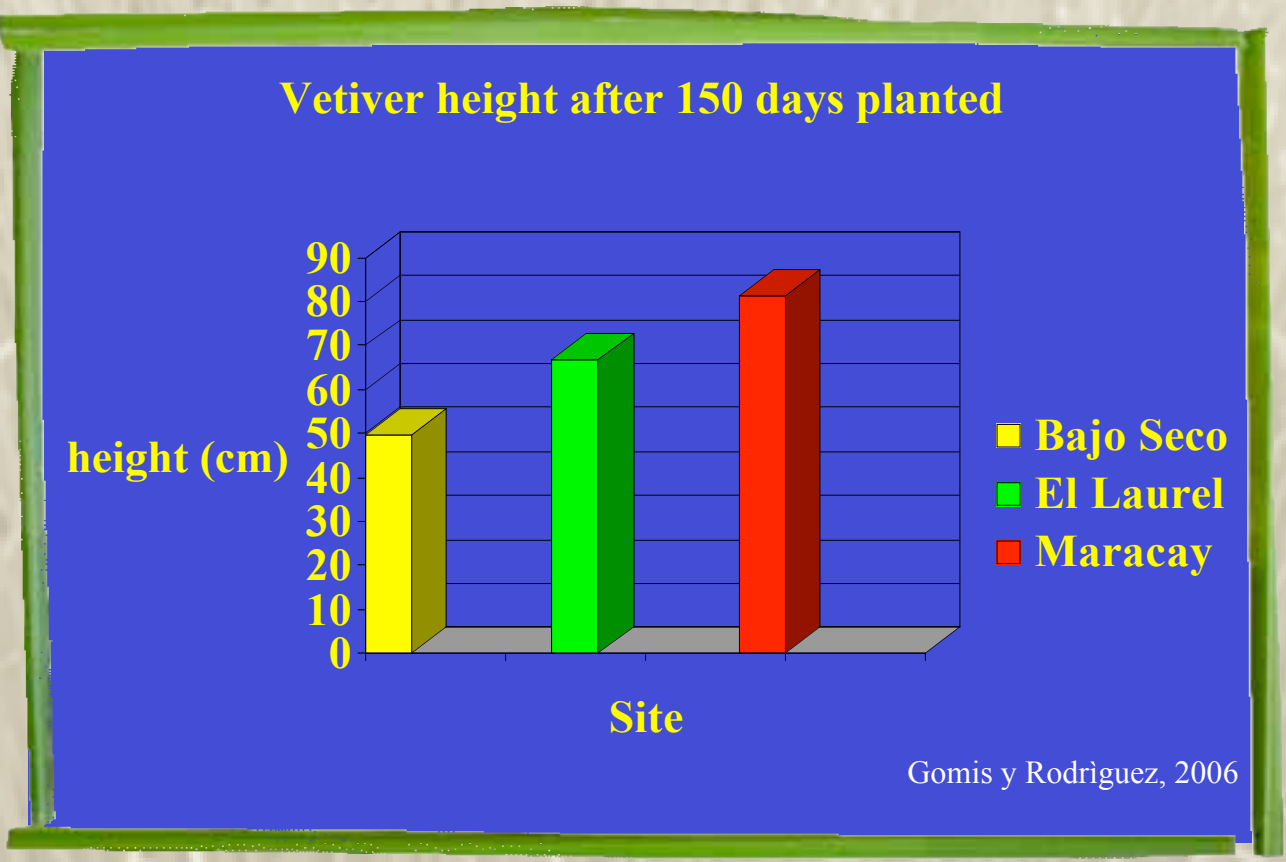

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Vetiver plant (*Vetiveria zizanioides* (L.) Nash) from treatment T4 (0,6 de Oxochen ®, 0.5_mol AIA, 1_mol BAP) some weeks after implanted
(N. González y J. Páez de Cásares 2006)

Effect of different concentrations of ANA on rooting of vetiver tillers
H. Quecan y J. Páez de Cásares, 2006)

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Ecotypes collection

Nemoralis type	**Zizanioides type**
1. Prachuap khiri khan	7. Songkhla
2. Roi et	8. Sri lanka
3. Ratchaburi	9. Kamphaeng phet 2
4. Loei	10. Surat thani
5. Kamphaeng phet 1	
6. Nakhon sawan	

Ecotypes collection introduction from Thailand to Venezuela

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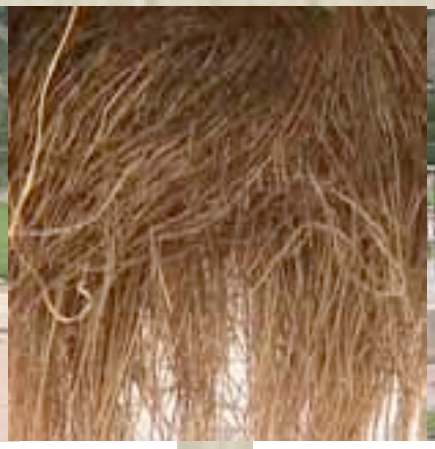
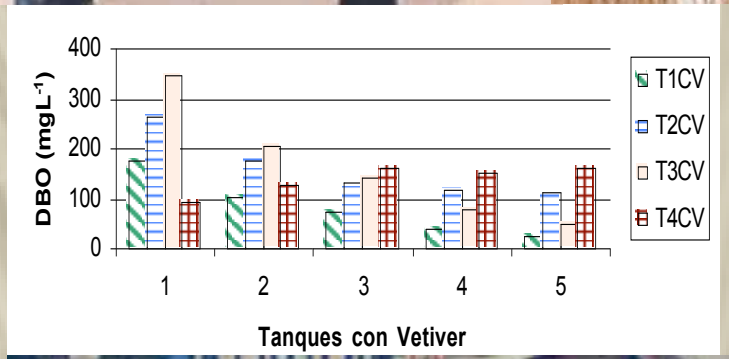
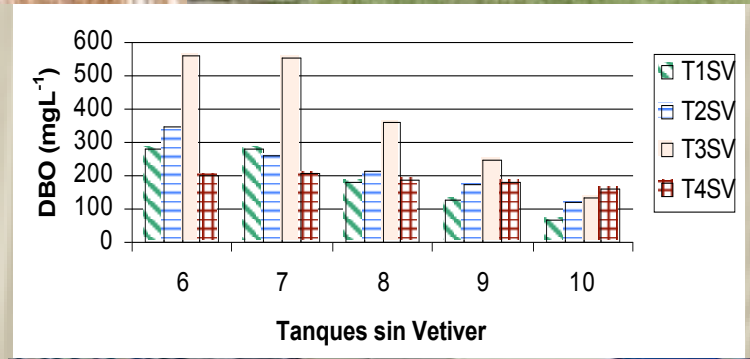
Phytoremediation experiment
Pepsi Cola Plant Villa de Cura edo. Aragua Venezuela
Scavo, M., O. Rodríguez, y O. Luque 2006







Research on Vetiver in Venezuela and Latin America

VGT needs to be safe and confident for users and some aspects must be studied more carefully and needs priority attention:

- Operational standards and confidence limits for specific applications must be settled
- Pest attacks {*Aeneolamia varia (Homoptera-Cercopidae)*} have been observed in some places and others can occur, so, alternative IPM solutions should be find
- Economic and effective maintenance methods are needed to assure the benefits expected
- Ecotypes introduction must be carefully monitored, and evaluation for different purposes within different conditions should be conducted before massive application
- Social development projects associated with VGT basic principles and alternative uses of vetiver can be systematized in a multipurpose model

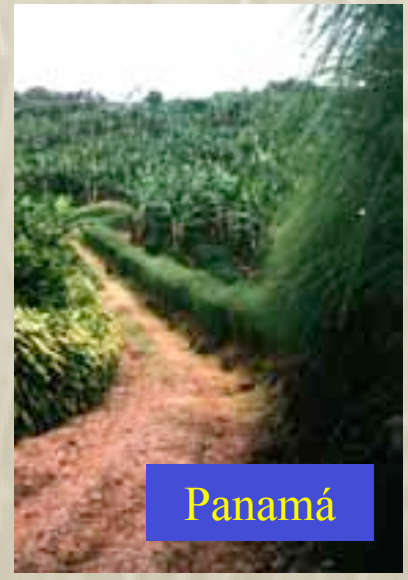
Applications of Vetiver in Venezuela and Latin America

- **Practical applications of vetiver grass in the region include almost all uses and utilizations of this extraordinary plant.**
- **Vetiver existence and application has been reported in nineteen countries of the region**
- **Bioengineering and environmental applications are the most popular uses because of the commercial and business opportunities they offer in diverse situations:**

  (Oil and mine industry, communication network, service corridors, land restoration and rehabilitation, wastewater treatment, others)

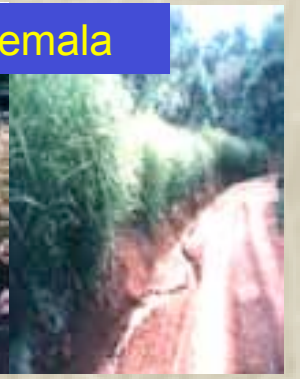
- **There is a need to expand in a massive way VGT for soil and water conservation in rural areas to promote sustainable agriculture and strengthen community development. PFVP is an example of this kind of initiative. Soil degradation and water quality deterioration is a frequent problem around Latin American countries, specially in impoverish rural areas.**

Applications of Vetiver in Venezuela and Latin America



Applications of Vetiver in Venezuela and Latin America


Pto. Escondido, México

Guatemala

El Salvador

Protección de talud en el Club Magnum
en Caracas, Autopista de Prados del Este

Applications of Vetiver in Venezuela and Latin America

Applications of Vetiver in Venezuela and Latin America

VETIVER CVG BAUXILUM –LOS PIJIGUAOS- PROJECT VETIVER ANTiEROSION C.A

OSWALDO LUQUE M, RAFAEL LUQUE M.-JULIO 2005 (fotos R. Luque)

Applications of Vetiver in Venezuela and Latin America

Handicrafts made by beneficiaries of Fundación Empresas Polar Project

Promotion and networking of Vetiver in Venezuela and Latin America

- *Once VGT great potential was valorized diffusion campaigns were initiated to promote its use*
  - *LAVN was settled in Costa Rica*
  - *Conserving Soil and Water in el Carazo-Nicaragua*
  - *Erosion control and soil restoration program, Oaxaca-Mexico (PCERS)*
  - *Promoting VGT in Venezuela Project (TVN-SCA-UCV) (King of Thailand dissemination award ICV-2)*
  - *First workshop on bioengineering (BM, NOBS Antierosión, RUTA and LAVN) Products: CD, Video and Proceedings*
- *LAVN moves to Maracay-Venezuela*
- *PFVP initiate activities inspired by green book, PRVN bulletin on vetiver handicrafts in Thailand and other materials provided trough LAVN and VEVN*

Promotion and networking of Vetiver in Venezuela and Latin America

Promotion and networking of Vetiver in Venezuela and Latin America

Final remarks

The slogan of this conference (ICV-4): *Vetiver and People. A green investment for sustainable development,* is not casual…

- **Social problems and poverty are frequently related to environmental quality**
- **Vetiver is an alternative affordable by anyone to mitigate or solve environmental problems common to Latin America and other regions of the world**
- **Vetiver is a powerful tool to strengthen and mobilize communities who participate in projects that improve basic services and incomes and at the same time protect their environment (a win-win solution)**
- **Where conditions are met to use VGT, opportune and effective information or assistance from the network and other sources are crucial for appropriate and successful application of the technology, which means that environmental, social and economic benefits will be achieved.**

Acknowledgements

- *Special recognition to Thailand's role in the initiative promoted by Majesty King Bhumibol Adulyadej for the development of ICVs as well as VGT in Thailand, shared graciously through the nets, and to the support given by HRH princess Maha Chakri Sirindhorn to TVN*
- *To TVN, in particular to Richard Grimshaw, James Smyle and Dale Rachmeler for granting Venezuela with TVN Country award, and support activities of the Latin American networks*
- *Investigation, application and diffusion of VGT has been possible thanks to the great support of my colleagues and friends from*
    - *Central University of Venezuela, School of Agronomy*
    - *Sociedad Conservacionista Aragua*
    - *Fundación Empresas Polar*

Bienvenidos!

Welcome!