

Vertical Soil Traps and Vetiver System For Slope Protection in Road Anillo Regional Santo Domingo Xenacoj, Guatemala.

VETIVER TEC
Restauración Ambiental

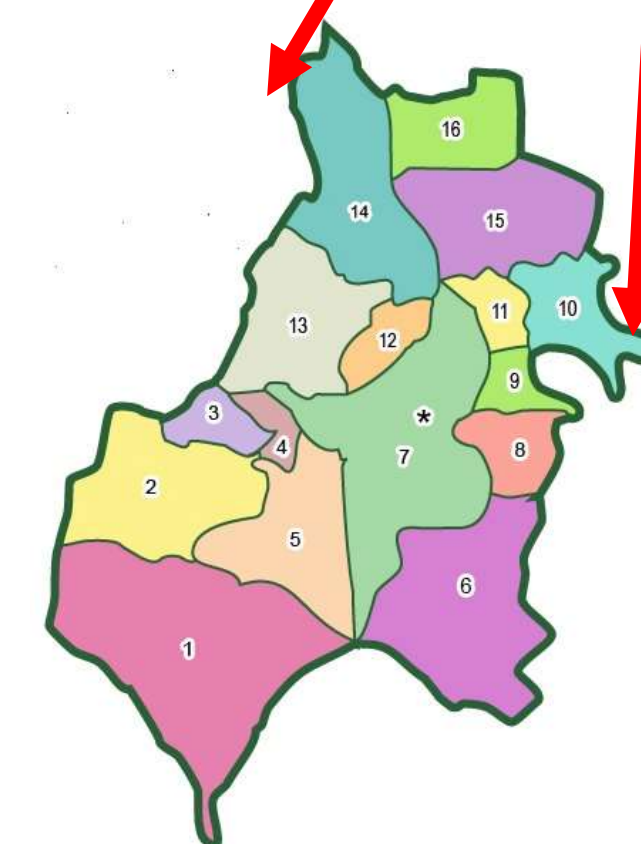
Member:



Guatemala



Georeferencia



Guatemala



Diagnosis



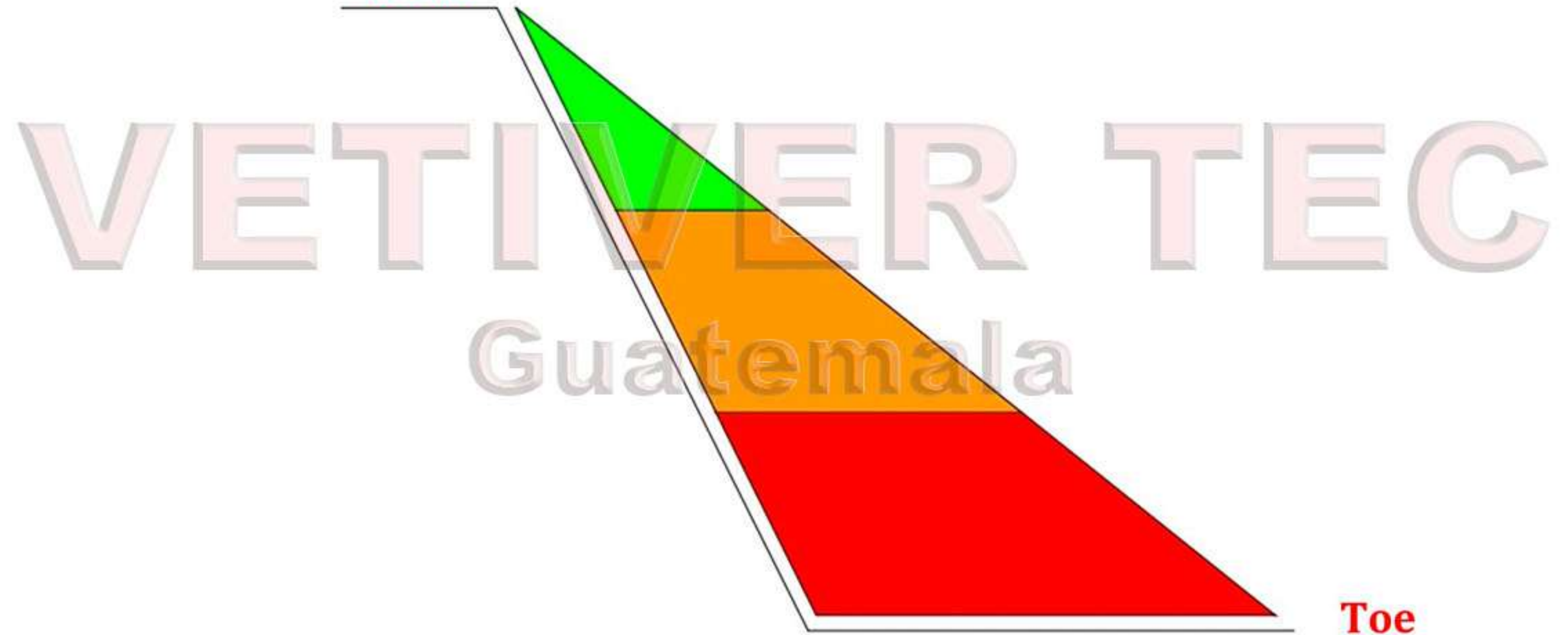
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Issue

Run off our major actor!
Hydraulic gradient

Crown



Toe

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Challenge

- 1- Non-interrupted fill slope
- 2- No drainage structure
- 3- Rainy season
- 4- Compacting gradient



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Challenge

Compacting gradient + Regolith



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Brainstorm

- ✓ Roundtable
- ✓ Urgent due to rainy season
- ✓ Harmfull: Pungent and sharp run-off
- ✓ Wide variety of solution: Befitting and innovative solution

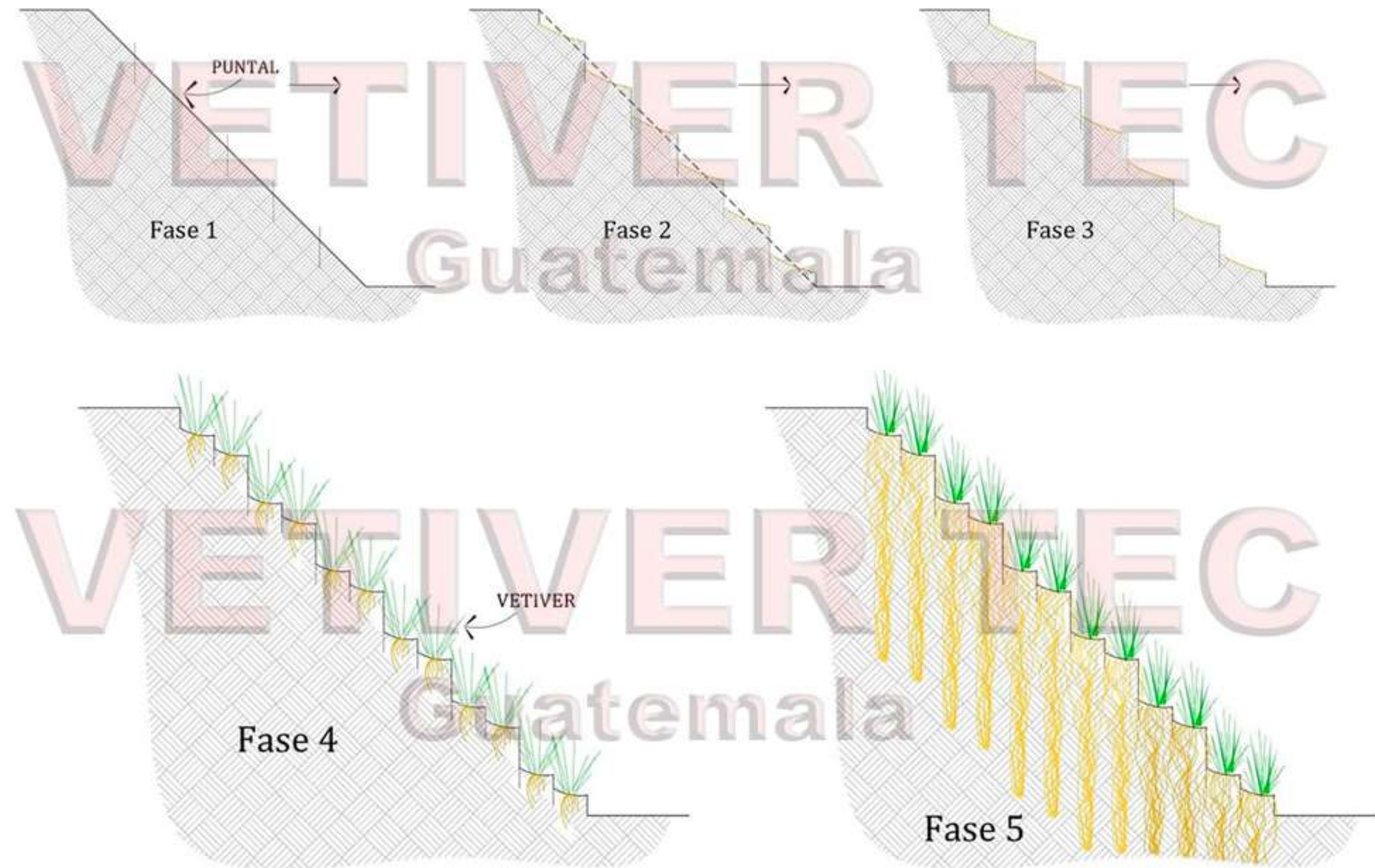


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Deliberate

Mode of action
Terracing process



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Metodology

Guatemala



Methodo

- ✓ Draw contour line: subtle unleveled, 6 m apart.
- ✓ Stick wooden poles into the ground until deep safe compacted zone. Mandatory.



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Methodo

Atach geotextil to the wooden sticks rows.



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Methodo

Promote sediments bench forming



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Methodo

Planning Vetiver plants



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Methode

Maintenance



Guatemala



Conclusions

- ✓ This system has trapped as much as 9,700 m³ in 110,000 m²
- ✓ The system is befitting for such hostile conditions
- ✓ The principle of the solution was to slow down in each section the increasing hydraulic energy of run-off
- ✓ The success of the solution was the planning step

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Recommendations

- ✓ Include drainage structures at initial design
- ✓ Avoid rainy season during installation process
- ✓ Increase bench forming structures density

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Results

- ✓ Stable and vegetated surface
- ✓ Amount of soil has been trapped never was seen before
- ✓ Low cost solution for fill slope
- ✓ Landscape improvement

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Mode of action
Vertical soil traps



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SUCCESS CASE:

BÓVEDA MAGDALENA, ANILLO REGIONAL

Guatemala



Before



After



SUCCESS CASE:

DEPÓSITO PALO HUECO, PLANTA SAN GABRIEL

Guatemala



Before



After



Gallery

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DEPÓSITO PALO HUECO,
SAN JUAN
SACATEPÉQUEZ

Guatemala



DEPÓSITO PALO HUECO,
SAN JUAN
SACATEPÉQUEZ

Guatemala



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SACATEPÉQUEZ

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Other Projects

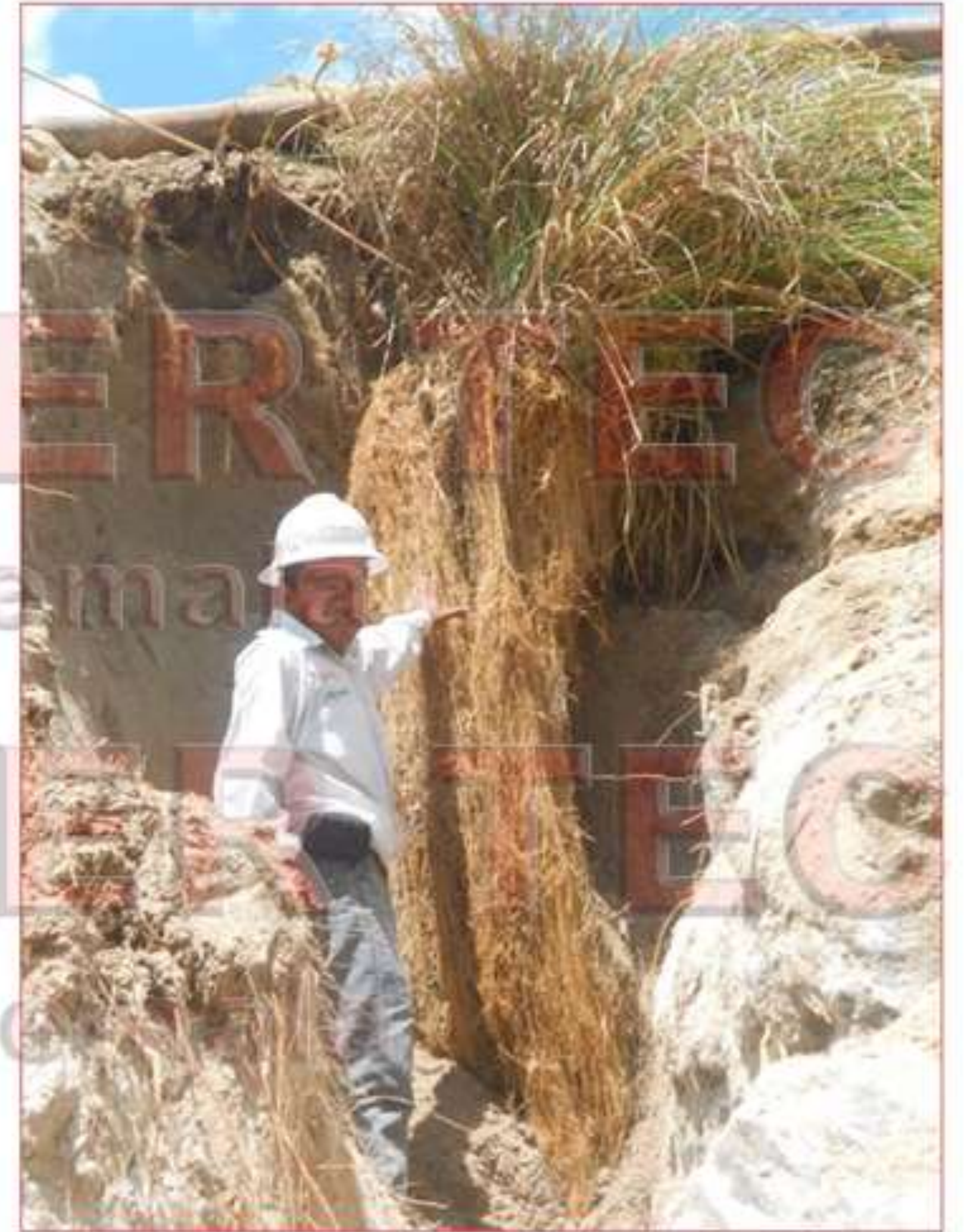
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Vetiver plant root system



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Thanks for your
attention.

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