

VETIVER SYSTEM UTILIZATION FOR AGRICULTURE AND IN THE FIGHT AGAINST URBAN EROSIONS IN DEMOCRATIC REPUBLIC OF THE CONGO (DRC)

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1. Vetiver System for Agriculture

In some regions of the DRC farmers cultivate steep slopes (photo 1).



Photo 1: Typical unprotected and eroding slope

The sloping land is very vulnerable to erosion after the harvest because the soil is left without cover. In most cases the soil fertility is quickly lost due to rainfall runoff and the consequent leaching of mineral. For a sustainable use of these classes of land the combination of vetiver hedgerows and

food crops is an effective solution. Vetiver hedgerows established on these sloping lands every 5 meters following the contour lines (see photo 2). Between these hedgerows other crops such as cassava, maize, and pineapples are planted (photos 3-5).



Photo 2: Slope protected by vetiver hedgerow.



Photo 3: Vetiver hedgerow and cassava.



Photo 4: Vetiver hedgerow and pineapple. Notice the pineapple has been mulched with vetiver leaves.



Photo 5: Vetiver hedgerow and maize. Vetiver is a host to stem-borer resulting in a reduction of stem borer attack on the maize (stem borer larvae fall off vetiver leaves and die)

This practice has advantages as:

- vetiver hedgerows can prevent erosion of ground after harvest. They also retain sediment that would have been deposited at the bottom of the slope or in the adjacent streams. These hedges vetiver will form natural terraces after several years.
- Vetiver leaves can be cut regularly for mulch thus reducing weeds and the labor required for weeding. Mulch also conserves soil moisture.
- The vetiver leaves as decomposing mulch improves soil organic and increases soil nutrients.

2. FIGHT AGAINST URBAN EROSIONS

Erosion is an urban problem of environmental importance that face certain urban areas of the DRC due to the unregulated construction buildings on sloping land (photo 6).



Photo 6: Badly eroding gully and unprotected drainage.
Most civil engineering work to stop the progression of this

erosion is not sustainable due to the lack of the plant protection. The dissemination of the Vetiver System in DRC by TVNI has resulted in the adoption of vetiver grass as a cover for the effective and sustainable protection of drainage works for excess rainwater (photos 7 and 8).



Photo 7: Gully and drainage channel with recently planted vetiver protection.



Photo 8: As in photo 7, but a few months later.

In other cities or districts, the state does not have the funds necessary to finance costly civil engineering. The extension of vetiver system by TVNI has been through the training



Photo 9: The problem - massive gully erosion.



Photo 10: Reshaped gully with newly planted vetiver.



Photo 10: The protected gully after 4 months..

of local communities to fight against the increased erosion (photo 9) using their limited financial resources, by planting vetiver, after manually shaping the slope of the ravine (photos 10 and 11). These demonstrations were performed successfully in the town of Kikwit, the province Bandundu.

Editor's note: Alain Ndona is one of a growing number of African vetiver specialists. He is certified by TVNI. Apart from the work shown in these applications, he has been responsible for some magnificent work in stabilizing major highway cut and fill slopes in DRC. He can be contacted at: alinondona@yahoo.fr