News

A golden opportunity to transform eroded land

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Where land is under pressure from large number of livestock and low amounts of rain, the vegetation is risking being too little to be able to hold the soil when a sudden and heavy rain is coming. Therefor, topsoil can erode quite fast and change the whole landscape and its potential for production.

One of the Livestock café sites in the SLU-led Drylands Transform project was heavily eroded and parts of the land was impossible to use unless the gullies were rehabilitated. This gave the project a golden opportunity to conduct a training in land rehabilitation at the same time as trying to convert the land into something that can actually produce. To spread the knowledge of land rehabilitation, a training was conducted for using Vetiver grass in gully rehabilitation in Chepukat livestock café site in Chepareria ward, West Pokot County.

West Pokot is having areas that can no longer be used for any type of production due to severe erosion. One area like that was “appointed” to be part of the livestock café site, which gave the project a golden opportunity to conduct a training in land rehabilitation. Several trainings and demonstrations will be carried out on the livestock café sites to involve and activate the local communities and this is just one example.

Land management methods can be expensive and sometimes not even effective. The use of vegetative methods like grasses is an important sediment and soil erosion control method since they are economical and has the potential to be effective in the rehabilitation of degraded landscapes. The use of vetiver grass (*Chrysopogon zizanioides*) has been regarded as a low-cost and eco-friendly tool to combat soil erosion and for water conservation compared to other soil conservation technologies.

Vetiver grass can be easily established and can survive in conditions where other plants cannot. Drylands Transform aims to co-develop sustainable rangeland restoration and management options with the local communities and other stakeholders. The Vetiver grass technology was initiated as a tool to rehabilitate the severely eroded part of the Livestock Café site and showcasing it as one possible solution to other severely degraded hotspots in West Pokot County.

The landscape in West Pokot before rehabilitation. Photo: Margeret Nyaga

Margeret Nyaga is measuring the gully to be rehabilitated. Photo: Stephen Mureithi

Vetiver grass can survive in places where it is hard for other grasses. Photo: Margret Nyaga

Women plant Vetiver grass splits into the sacks. Photo: Margeret Nyaga

After rains, the vetiver grass has started growing well in the sacks while it is empty beside. Photo: Margeret Nyaga

Aims of the training

- To survey all the gullies at the site and plan and design the number of contours required.
- To mark and layout the contour lines along the gullies.
- To initiate rehabilitation of the gullies using Vetiver grass planted in sacks filled with a mixture of soil, river sand and manure.

Measuring gully and planning contours

The Vetiver trainer, Jane Wegesa together with her assisstant Andrew Wekesa and Dr. Stephen Mureithi surveyed the site taking the measuresments of the gullies. The length of the gully was 2456m and the width was 405m. Jane designed 7 contour lines along the main gully and more contours were concentrated at the gully head to reduce the pressure of surface run off down slope. The design also included reinforcement of the shoulders of the gully with bags and vetiver planted to prevent further erosion.

Marking contour lines

The following step involved marking of the contour lines and ensuring that they will be levelling the ground. White ash was sprinkled to mark the contour along the line. Members of the community were involved in all steps and the importance of every activity was explained. Many questions came up and community members were eager to learn how the huge gullies at the site can be rehabilitated.

Filling sacks with sand-soil-manure mix

Most part of the training was spent on mixing the material for the sacks and placing them along the contours. The ratio of sand, soil and manure used was 2:3:1. The mixtures were put in sacks weighing 50kgs and placed horizontally along the previously marked contour lines after leveling the ground. The sacks help in reducing the evaporation of water allowing the vertiver splits to establish. This is important especially in the arid and semi-arid areas where the evaporation rates on bare soil is high.

Planting of Vetiver grass in sacks

Finally, after the soil bags were properly laid onto the marked contour lines and firmly pinned with some wooden pegs, small openings were made using a knife to open up spaces for planting the Vetiver grass splits. The community members were divided into groups to plant the grass after demonstrations

Vetiver grass growing

The establishment of the Vetiver grasses on contours was successful due to timely rains and the next steps will be to initiate more restoration practices along the contour lines and other parts of the site, such as planting of trees and other grass species to bolster success.

Facts:

Drylands Transform

Drylands Transform is a 4-year research project funded by Formas that started up during the Covid-19 pandemic in October 2020. It includes an interdisciplinary research team representing SLU and seven other universities and international organisations from Sweden, Kenya and Uganda.

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