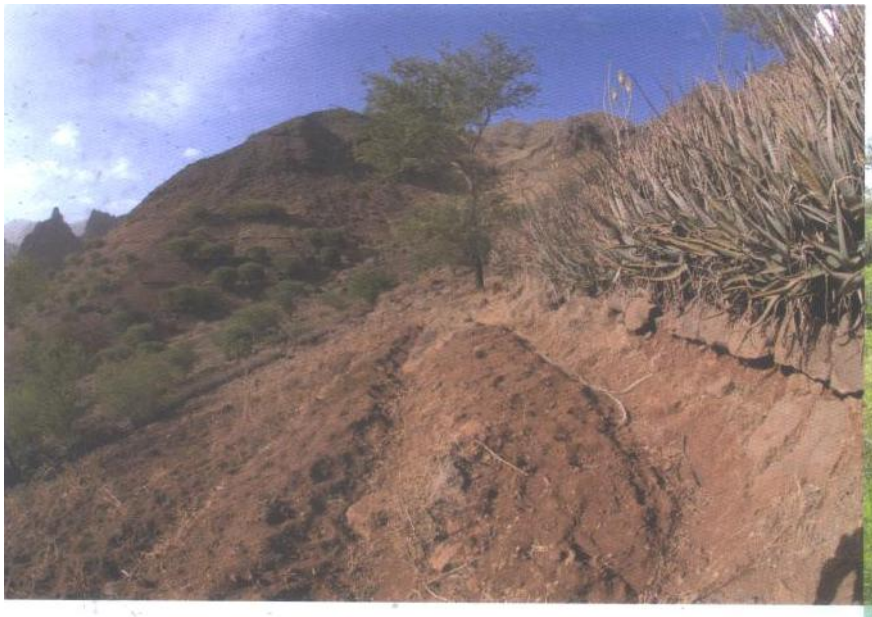
DES!RE

Desire for Greener Land

Options for Sustainable Land Management in Drylands

WOCAT

World Overview of Conservation Approaches and Technologies



Above left: *Aloe vera* living barriers are often combined with stone walls to enhance the erosion control on steep slopes (Photo: Hanspeter Liniger)
Above right: *Aloe vera* in an agroforestry farming system (Photo: M. Moemedi)

Aloe Vera living barriers

Cape Verde - *Barreiras Vivas de Aloe vera (Portuguese)*

It is a technique which uses the structure of a cross-slope barrier of *Aloe vera* to combat soil erosion by decreasing surface wash and increasing infiltration.

Aloe vera is a durable herbaceous plant which is planted in the form of living barriers to recover degraded slopes on the Cape Verde Islands.

The plants are closely planted along the contour to build an efficient barrier for retention of eroded sediments and superficial runoff. The living hedges of *Aloe vera* stabilize the soil, increase soil humidity by improving infiltration and soil structure. Groundwater is recharged indirectly. Soil cover is improved, and thus evaporation and erosion reduced.

Implementation is relatively simple. The contour lines are demarcated using a water level. Seedlings are planted along one line at a distance of 30-50 cm between plants; spacing between the rows varies between 3-5 m according to the slope. The technology is applied in subhumid and semi-arid areas, on steep slopes with shallow soils, a poor vegetation cover and high soil erosion rates. These areas are generally used by poor subsistence farmers for rainfed agriculture with crops such as maize and beans, which are considered inappropriate for such slope angles. On slopes steeper than 30% the living barriers are often combined with stone walls (width 40-50 cm; height 80-90 cm). The plants stabilize the stone risers, making this combined technology one of the most efficient measures for soil erosion control on the Cape Verde Islands.

The herbaceous plant is well adapted to the local biophysical conditions and to the land use system: it can be grown with any crop, is available for any farmer, establishment and transport are simple, its green leaves are not palatable for livestock, the plant is extremely resistant to water stress and grows on any bioclimatic zone on the island. Furthermore, Aloe is known for its multiple uses in traditional medicine.

Location: Ribeira Seca catchment
Region: Santiago Island, Cape Verde
Technology area: 71.5 km^2
Conservation measure: vegetative, sometimes in combination with structural: contour furrows and stone walls
Stage of intervention: rehabilitation / reclamation of denuded land
Origin: North Africa during slavery in the 15th century, externally / introduced through project (10-50 years ago)
Land use: cropland and grazing land
Climate: semi-arid, tropics
WOCAT database reference: QT CPV06e on cdewocat.unibe.ch/wocatQT
DESIRE site information: www.desire-his.eu/en/ribeira-seca-cape-verde
Related approach: Training, Information and Awareness-raising (QA CPV01)
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