

### Experiences with soil and water bioengineering techniques

# Slope grid

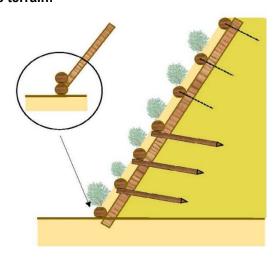
#### **General characteristics**

Protection of the stable slopes with serious problems of consolidation of topsoil and slopes with a gradient more than 45-50°. It can be steep slopes in roads, banks, etc.

#### **Technical characteristics**

The structure is made by a union of logs which are perpendicular to each other creating a slope grid structure. Slope grids are secured in the ground with steel nails and anchors. Simultaneously with their filling with earth, brush layers, hedge brush layers or rooted plants are inserted or transplanted, or seeding performed subsequently.

Profile scheme with two possible bases of the structure and two possible fixation systems on the terrain:

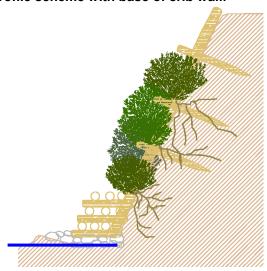


The structure should be well secured. In the case of the riverbanks it is necessary to consider a good base, combining with other techniques.

Steep slopes are secured depending on the cohesion of the soil. The objective is to reduce as much as possible the number of holes that are in the wood.

Logs can be anchored directly with corrugated or using a wooden stick anchored in the ground, which with the time structure the soil. In that case the construction can be halfway between a slope grid and a simple cribwall.

#### Profile scheme with base of crib wall:



The number of horizontal sticks are calculated in relation to the slope and cohesion of the soil. The evolution of the structure depends on the plant, so its selection is fundamental.



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### Evaluation of the technique

The protection of steep slopes with a slope grid is immediate, increasing this protection while the vegetation is rooting, and creating a natural structure that in long term will give a total stability. The vegetation give a draining action due to the absorption of the necessary water for its development.



(Pictures showed in this document are from interventions carry out by Naturalea)



