

Mini-Series: Sand Fixation and Tree Planting in Mauritania

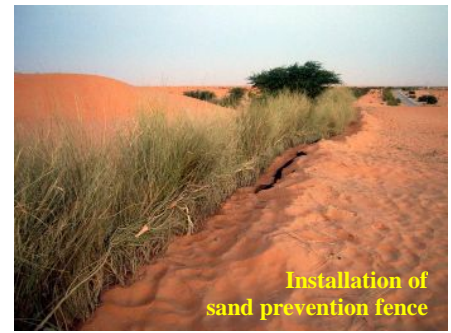
Part 2: Sand fixation and tree planting techniques in Mauritania

In the previous part of this mini-series, we reported on sand fixation and tree planting in Mauritania. Now we would like to report on actual planting techniques used in the country.

After the selection of planting areas, most of the time, a sand prevention fence (windbreak) is constructed before planting in order to stabilize the surface sands of the planting area. In particular, for tree planting along a road to protect the road, establishment of sand preventing windbreaks is essential. Common materials for such “sand prevention fences” are the trunks of *Calotropis procera* used as posts, and species such as *Euphorbia balsamifera* and *Leptadenia pyrotechnica* as “fence wire”. In oasis areas, mostly date palm leaves are used for sand prevention fencing. The windbreak fences established in planting areas for road protection beside roads and in planting areas for dune stabilization are rarely maintained and as time passes, and planted trees grow, the fences collapse and go back to nature.

In contrast, the planted tree species tends to be *Prosopis juliflora* which is a drought resistant exotic species. *Prosopis juliflora* has been used widely due to the fact it has a high water absorbing capability and grows very well in dune areas. However, due to its strong water absorbing capability, *Prosopis juliflora* tends to affect the growth of date palms, and its branches and leaves are not appropriate fodder for livestock. Therefore, people avoid using the species around farms and they prefer using indigenous species such as *Tamarix aphylla* and *Balanites aegyptiaca*. However, in extremely environmentally harsh areas such as dune areas, *Prosopis juliflora* is still widely used (according to information obtained in 2005).

When establishing a windbreak and planting trees in the same area, it is important to develop a schedule that employs good timing for seedling planting to utilize rain water in the rainy season. Planting of trees normally takes place from July to August when Mauritania has a relatively higher rainfall. Prior to the planting, establishment of windbreaks and nursing of seedlings starts around April (see the table below). When planting activities are conducted to establish common woodlands of an oasis, the seedling nursery is established at the peripheries of the oasis, windbreaks are established and seedlings are produced. Before a tree is planted, a cylinder is placed underground in order to prevent water permeating beyond the sapling’s root system. As sufficient amount of watering takes place inside the cylinder, transplanting of a seedling takes place. After planting, water is given inside the cylinder several times. After that, the cylinder is removed and the seedling is left to nature. It is a very simple technique.



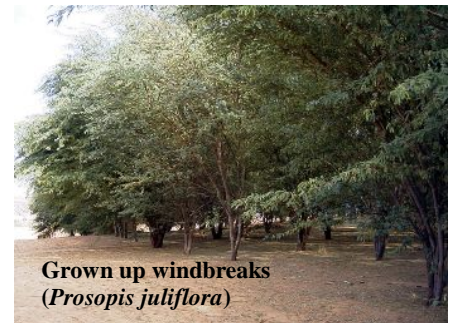
Installation of sand prevention fence



Seedlings for planting (*Tamarix aphylla*)



Young tree after planting (*Tamarix aphylla*)



Grown up windbreaks (*Prosopis juliflora*)

	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
1) Seedling nursing	→									
2) Establishment of sand prevention fence	→									
3) Transplanting of seedling				→						
4) Maintenance, management and study	→									

In Mauritania, sand prevention and tree planting activities are undertaken in a very dry climate and in circumstances enduring severe economic constraints that prevent adequate investment in the activities. Windbreaks using local materials will achieve objectives and they will return back to nature when planted trees mature. Seedlings are nursed locally and planted. Apart from temporary post-planting management, rooting and establishment of the seedlings largely depend on the natural environment. Strong seedlings survive. This is the basis of Mauritania’s sand prevention and tree planting techniques.