

6. Management and harvesting of plantations

Management and harvesting activities have the main aim of ensuring the sustainability of plantations in order to maximize the beneficial effects of dune fixation work and prevent the sand from starting to move again.

In arid and semi-arid zones, the contribution of reforested dunes to wood and fodder production is secondary in the first years of the plantations' establishment, when the environment created is still fragile and unstable. Moreover, the main purpose of the plantations is long-term protection of socio-economic infrastructure (roads, irrigation channels, dwellings, water towers, etc.) and of the farm and grazing land needed for sustainable economic and social development.

The main measures to be taken are:

- the establishment of a grazing ban for these areas with very strict guarding, complemented if necessary by the installation of wire netting fences (which are unfortunately fairly expensive and hard to maintain) or live or dead vegetation fences around plantations; clearly defined corridors make it easy to cross plantations without damaging them;
- the education and supervision of local inhabitants and the search for their real participatory involvement in preserving their environment.

With a view to ensuring the sustainability of all the planting carried out, it is thus important to build on the results achieved by previous projects and programmes. Forest harvesting studies have provided interesting data on the felling methodology, technique, height and period, the appropriate equipment and its availability on the local market, the organization of work, and regeneration through resprouting.

The reforestation work carried out around Nouakchott had the main objective of stabilizing dunes threatening the capital's socio-economic infrastructure. Management of these stands is intended to regulate harvesting by maintaining the beneficial effects of curative action, especially that concerned with dune fixation, while sustainably protecting the forest capital established. In this case, the harvesting of mature stands principally of *Prosopis juliflora* is considered a silvicultural operation intended to rejuvenate the vegetation. Felling for health, maintenance and clearing purposes allows collection mainly of the plant matter needed for mechanical dune stabilization. In the future it will be able to meet part of the population's needs for fuelwood, charcoal, poles and fodder.

These management activities focus mainly on:

- establishment of permanent random observation plots to identify the growth and production of *Prosopis* spp. of harvestable age, and to study the vigour of this species in resprouting; on these plots, harvesting consists of cutting all the poles on each tree at a height of 1.5 m in order, if necessary, to place future fresh shoots out of reach of the teeth of livestock; since most of the trees resprout very well, this technique was adopted for management of the plantations;
- ongoing training of field workers;
- organizational and operational aspects of work in the field;
- the harvesting calendar (March to July/August) for plots in the selected stands;
- purchase of appropriate equipment and tools available on the local market: bucksaws and various blades, shears, machetes, hatchets, gloves and chainsaws (for large-diameter branches);



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Treatment of mature Prosopis juliflora stands

- ongoing awareness-raising, through work meetings and field visits involving national technical services, regional authorities, local communities, cooperative groups, NGOs and others; such activities lead to greater awareness and participatory organization, with a view to gradual assumption of responsibility for the various interventions, thus ensuring both the success of such interventions and also the permanence and expansion of existing forest plantations.