

## Casuarinaceae for Soil Rehabilitation in Algeria

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Casuarinaceae trees are fast-growing multipurpose species which do not require chemical fertilizers due to their symbiotic association with the nitrogen-fixing actinomycete *Frankia* and with mycorrhizal fungi that contribute to improve phosphorous and water acquisition by the root system. Casuarinaceae trees can grow in difficult sites, colonize eroded lands and improve their fertility, allowing the subsequent growth of more demanding plant species. Therefore, these trees have been increasingly used for reforestation and reclamation of degraded lands in tropical and subtropical areas.

In Algeria, sand mining activities are developed to fulfill the need for building construction. These activities have indeed a negative impact on the environment due to the destruction of natural ecosystems through removal of soil and vegetation. The restoration of mined land includes ecosystem reconstruction via reestablishment of the capability of the land to capture and retain fundamental resources.

The objective of the project that is currently being developed between Montpellier and Oran is to evaluate the potential of Casuarinaceae trees for rehabilitation of the degraded areas due to intensive sand extraction in the region of Mostaganem ( Société des Carrières de l' Ouest ). Some Casuarinaceae species such as *Casuarina equisetifolia* have already been introduced in Algeria. So far, to our knowledge, no data are available concerning the identification of symbionts associated with *Casuarina* in Algeria.

The Casuarinaceae species that will be the most appropriate for these degraded sandy and salty areas will be identified. The production of casuarina trees for land reclamation will imply the inoculation with suitable *Frankia* and mycorrhizal strains. Their effectiveness for nitrogen and phosphorous acquisition will be evaluated together with their ability to persist in the soil after planting. Contribution of *Casuarina* to soil fertilization will be determined.

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