

## Threats and management of *Dracaena cinnabari* trees

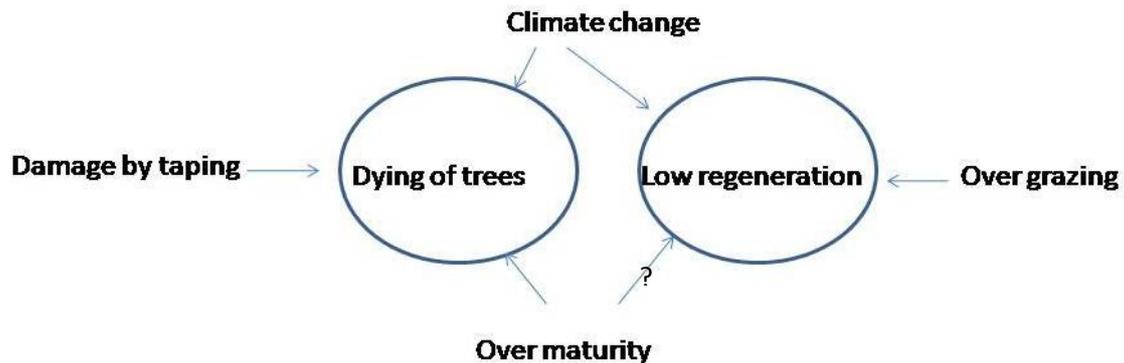
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Dragon's blood resin or "Dam Al-Akhwain" (blood of the two brothers) is one of commercial NTFPs in Yemen produced by tapping *Dracaena cinnabari* trees. The species is part of the Red List of the 'International Union for Conservation of Nature (IUCN)' and counts for "vulnerable" (B2ab(iii) ver 3.1). The traditional management system of tapping dragon's blood resin system is not sustainable due to its damage to the trees and the lack of control. There are two types of dragon's blood products "Edha'a" which is dragon's blood resin mixed with parts of tree's bark and pure dragon's blood which called "Emseloh" and collected with less damages to the trees.

The whole forest indicates a similar age structure of *Dracaena cinnabari* trees with most of the tree height around 5 m and a diameter (DBH) 37cm. the most dense area which described as forest is in Firmehin National Park with average 66 tree ha<sup>-1</sup>. Other *Dracaena* trees scattered in Momi and Diksam plateaus described as woodland and some *Dracaena* trees mixed with dense mosaic forest on the top mountain of Hagher.

In some areas such as Firmehin around 84% of the trees have wounds. If you walk in the forest of *Dracaena* stands you will find also many dead *Dracaena* trees. Several threats to the long term survival of *Dracaena cinnabari* trees can be summarized as the following:



From the previous shape the main threats for the *Dracaena* trees come from human through over grazing for young seedlings and unsustainable harvesting of adult dragons' blood trees. Other threats are climate change which represented by low water availability and over maturity normally will cause dying of the trees but also can cause low regeneration may be because of low regeneration of seeds under natural conditions.

Reducing human pressure is important management strategy; this can be done through sustainable harvesting of dragon's blood and controlling livestock grazing in dragon's blood trees growing areas. Management intervention is other important management strategy; this can be done by replanting *Dracaena* seedlings in the wild and necessary measures for protecting planted and growing seedlings. In the end more field experiments are needed.

There are several researches and articles about *Dracaena cinnabari* trees. In this short article I wanted to summarize some aspects related to *Dracaena cinnabari*. *Dracaena cinnabari* called in English "Dragon's blood tree" in Arabic "Dam Al-Akhawain" (blood of the two brothers) and in Socotri "Eriheb".