

AFROCARPUS GRACILIOR

Description



Figure 1. Treetop of *Afrocarpus gracilior*.

Afrocarpus gracilior (Thunb.) (synonymously also called *Podocarpus falcatus*, *Afrocarpus falcatus*) is one of the only two conifer species known to be native to Ethiopia. It is commonly called as yellow wood, African fern pine (in English) and Zigba (in Ethiopia). It is an evergreen climax species that grows slowly to a height of up to 40m, and it is characterized by a complicated lobate stem nature (MAATEN-HAUSTON ET AL., 2011; ADIE 2010). It is a member of the *Podocarpaceae* family.

Distribution

Afrocarpus gracilior naturally grows in mountain forests of the Eastern and South Eastern Africa starting from Ethiopia through Kenya, Tanzania and Mozambique to South Africa including Swaziland and Lesotho (Figure 2). It is also planted as an ornamental tree outside its natural distribution in Australia, the United States, and India (LOUPE ET AL., 2008).



Figure 2. Natural distribution of *Afrocarpus gracilior*. (LOUPE ET AL., 2008).

Management and growth habit

Afrocarpus gracilior generally has very low germination and recruitment than other *podocarpus* species. This is due to its strategy of dispersal and propagation in which it produces a heavy fruit, but invests mostly in dispersal (with a yellow flesh pulp or epimatium enclosing the seed) and protective tissue (stony shell or sclerotesta) and very little into endosperm food reserves for the embryo (GELDENHUYS, 1993). As a result, germination of the species at nursery is very difficult, and thus seedlings (germinants collected under mother trees from a natural forest) are usually collected and replanted in a nursery. Vegetative propagation of the species from cuttings of stock plants to the age of two years was found to perform better than seedlings (NEGASH, 2003).



Figure 3. Fruits of *Afrocarpus gracilior*.

As a climax species, establishment and early growth of *Afrocarpus gracilior* require shade from a nurse tree. Regeneration and fast growth of *Afrocarpus gracilior* was observed even under plantations of exotic species such as eucalypts and pines (SENBETA ET AL., 2002). *Afrocarpus gracilior* is therefore a suitable species for mixed plantations with exotic species in which it can also compromise the opinion of exotic tree plantations are generally detrimental. Of course, there is no better management for *Afrocarpus gracilior* than preserving and sustainably utilizing it in its natural environment.

Uses and ecosystem services of *Afrocarpus gracilior*

Products

The wood of *Afrocarpus gracilior*, which is normally called podo, is a favored timber for industrial purposes such as for lumber, veneer, panel products. It is particularly suitable for flooring and roofing and other interior purposes. It is also a preferred species for fuel wood. Furthermore, it is used for traditional medication in Ethiopia and Kenya.



Figure 4. *Afrocarpus gracilior* in Rift Valley, Ethiopia.

Ecosystem services

Afrocarpus gracilior forms a large crown that provides food and shelter to wild animals like birds, mammals, insects, and microorganisms. It is also vital for maintaining soil quality through a huge amount of litter production and its significant effect on the nutrient dynamics of the soil (YESHANEW AND WOLFGANG, 2013; ASHAGRIE ET AL., 2005).



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Conservation status

Afrocarpus gracilior is not currently included under the IUCN threat category. But some other species that grow in association with it such as *Echinops ellenbekii* (O.Hoffm) are endangered (VIVERO ET AL., 2005). Hence, ongoing deforestations that are occurring in the *Afrocarpus gracilior* forests (ASHAGRIE ET AL., 2004) will be catastrophic to the biodiversity of the country. In southwestern highlands of Ethiopia, *podocarpus* dominates some forests where it can be considered as a keystone species.

Conclusion:

- ➔ *Afrocarpus gracilior* is one of the most valuable tree species in the mountain areas of Ethiopia.
- ➔ It is, however, undergoing a rapid rate of deforestation as with other tree species in the highlands of Ethiopia.
- ➔ Owing to its economical, ecological, and environmental benefits to the country, *Afrocarpus gracilior* needs urgent conservation in its habitat and further reclamation of its former areas through plantations and assisted regeneration has predominant importance.

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