Hagenia abyssinica

Willd.

Rosaceae

LOCAL NAMES
Amharic (kosso); English (kousso,hagenia,cusso,brayera,African redwood); Swahili (mlozilozi,mdobore)

BOTANIC DESCRIPTION
Hagenia abyssinica is a slender tree up to 20 m tall, with a short trunk and thick branches; branchlets covered in silky brown hairs and ringed with leaf scars. Bark thick, brown or reddish-brown and readily peeling. No thorns or buttresses.

Leaves compound, 40 cm long, in terminal tufts; leaflets pale or bright green above, with silvery hairs below, reddish and sticky when young, 3-6 pairs plus a terminal leaflet, each about 10 cm long; margin finely toothed and fringed with long hairs; leaf stalks 12 cm long, with expanded wings formed from the stipules, densely hairy on the underside.

Flowers in handsome multibranched, terminal, drooping panicles up to 60 cm long and 30 cm wide, polygamo-dioecious, female heads pinkish-red, clearly veined, bulkier than the more feathery orange-buff to white male heads.

Fruit small, dry, winged, asymmetric, single seeded, brown syncarp with a single more or less ovoid carpel and fragile pericarp.

Hagenia is a monospecific genus and is most closely related to the monospecific genus Leucosidea. The specific name means ‘from Ethiopia’.

BIOLOGY
Trees have either male or female flowers. Flowering and seeding can be observed throughout the year with a break in the months with the coldest temperatures.

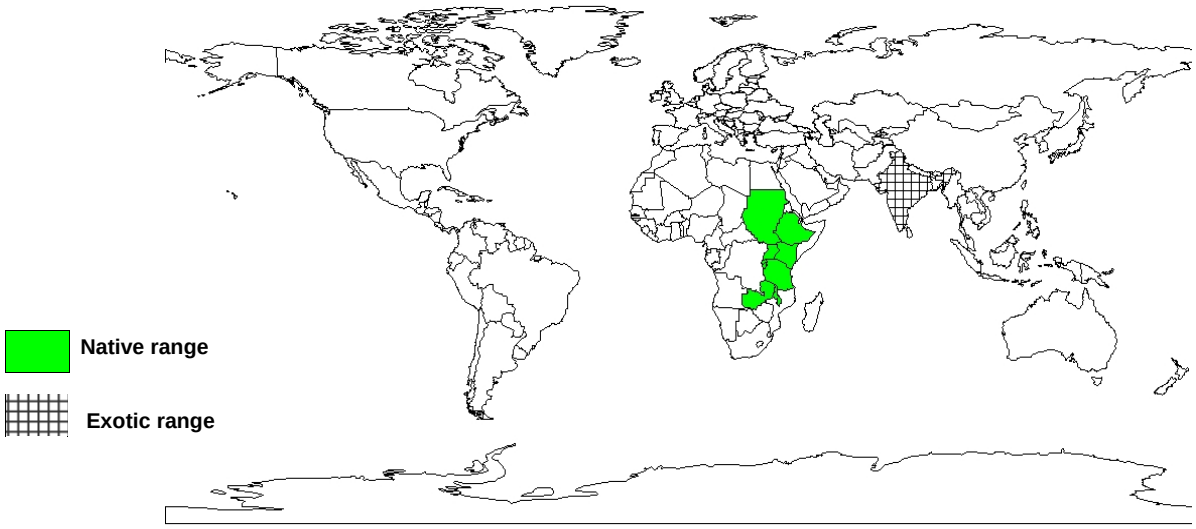
ECOLOGY
First described in Ethiopia and also found in East Africa, this tree is often dominant in the woodland zone just above the mountain bamboo. In Kenya, the species can be found on the slopes of Mt. Kenya, Mt. Elgon, the Aberdares, Cherangani Hills and the slopes of other high hills or mountains. It occurs in undifferentiated afro-montane forest (mixed Podocarpus forest, Juniperus-Podocarpus forest) and dry single dominant afro-montane forest (Juniperus forest or forest dominated by Hagenia), especially along the upper limit; often associated with Schefflera abyssinica, S. volkensii, Galiniera saxifraga, Rapanea melanophloës and with the mountain bamboo, Arundinaria alpina; at lower altitudes often at forest margins. This is a very clear example of an afro-montane endemic.

BIOPHYSICAL LIMITS
Altitude: 2000-3000 m
Mean annual rainfall: 1000-1500 mm

DOCUMENTED SPECIES DISTRIBUTION

Native: Burundi, Democratic Republic of Congo, Ethiopia, Kenya, Malawi, Rwanda, Sudan, Tanzania, Uganda, Zambia

Exotic: India



The map above shows countries where the species has been planted. It does neither suggest that the species can be planted in every ecological zone within that country, nor that the species can not be planted in other countries than those depicted. Since some tree species are invasive, you need to follow biosafety procedures that apply to your planting site.

PRODUCTS
Fuel: H. abyssinica is a good source of firewood and charcoal.

Timber: Wood is dark red, medium soft but not durable; it is used for furniture, poles, flooring, carving and cabinet making.

Medicine: The roots are cooked with meat and the soup drunk for general illness and malaria, while the dried and pounded female inflorescence is used as an anthelmintic (especially for tapeworm). Bark may be pounded, added to cold water and the liquid drunk as a remedy for diarrhoea and stomach-ache. Generally, this is a strong medicine that must not be taken in large quantities; it is sometimes taken as an abortifacient.

SERVICES
Erosion control: Trees are employed in soil-conservation activities.

Shade or shelter: The fire-resistant species can be used as a firebreak.

Soil improver: Hagenia constantly sheds leaves, providing mulch and green manure.

Ornamental: The attractive tree is suitable for planting in amenity areas.

Intercropping: In an experiment in Makete District Tanzania, grain yield of wheat was measured on eight different farms for a two-year period. The threshed wheat yield under a pruned H. abyssinica canopy averaged 810 kg/ha compared to 600kg/ha on parts of the field located at least 30 m from a tree.

TREE MANAGEMENT
In Tanzania, trees are planted or wildings are allowed to grow, interspersed throughout a field at a density of about 10 trees/ha. To reduce light competition with crop and foster marketable bole development, the trees are pruned once each year in November, about two months before planting crops at the onset of the rainy season. Typically, annual prunings of mature trees remove 40-50% of the canopy height. Pollarding is also a suitable silvicultural practice.

GERMPLASM MANAGEMENT
Seed storage behaviour is orthodox; hermetic air-dry storage at cool temperatures is recommended. On average, there are 400 000-500 000 seeds/kg.

PESTS AND DISEASES
Wood is susceptible to attack by borers.

FURTHER READNG

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SUGGESTED CITATION

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