

## Inclusion of Granddier's Baobab *Adansonia grandidieri* in Appendix II with an annotation limiting the parts and derivatives to seeds, fruits, oils and living plants

### Proponent: Madagascar

**Summary:** Granddier's Baobab *Adansonia grandidieri*, one of six endemic *Adansonia* in Madagascar, is a large deciduous tree that occurs in west and southwest Madagascar. Recent studies based on analysis of satellite images and field observations<sup>1,2</sup>, have found it to have a relatively extensive distribution (26,000 to 32,000 km<sup>2</sup>) along the Mangoky River and in the western part of the Menabe region. Populations of the tree are scattered through this area. The satellite image study estimated its population at over one million individuals, many more than has previously been suggested.

Regeneration levels of *A. grandidieri* appear to be low, with few young trees in the population. A number of potential causes have been proposed, including reductions or loss of populations of natural seed dispersal agents (wild animals that eat the fruit without digesting the seeds), an increase in the population of feral pigs and cattle, increasing human harvesting of fruits and bark and changing land use through the conversion to agricultural land and pasture. Forest cover has declined considerably in the region in the past few decades and deforestation rates are said to have increased markedly in the past decade.

The species has established local uses for fruit, seed oil, tree bark, bark fibre and wood. Local demand for juice preparation in hotels in Morondava (one of the main towns in the region) is roughly estimated at 3000kg of fruits per year. Local harvest of trees for fibres in Morondava market is estimated at the equivalent of 50 trees harvested<sup>6</sup>. The amount of national level trade is not known but seed mounds (equivalent to ca. 2500kg) have been observed in the market in Antananarivo (the capital, not in the area of distribution of the baobab) during the fruiting season<sup>6</sup>.

In Madagascar, several companies promote the commercialization and sustainable use of *A. grandidieri*, including through the production and marketing of baobab powder and baobab oil derived from fruit and seed<sup>3</sup>. The actual extent of this trade is unclear. A collection permit was granted to a company in Madagascar for 4000kg of *A. grandidieri* fruit for use in food and cosmetics; the full amount was reported as harvested in 2015<sup>4</sup>. Harvested fruit did not appear to be intended for international trade.

There is very little evidence of international trade in any products of *A. grandidieri*. Records from the Government of Madagascar indicate export of 150ml of seed oil (equivalent to 15 fruits) in 2014 and 35kg, apparently of seed oil (possibly seed), in 2015. Health products are advertised on online platforms as containing *A. grandidieri*<sup>5</sup>, but it is not known if these do in fact contain *A. grandidieri* extract. Seeds for horticulture are advertised internationally and there is some local purchase of seeds by tourists, presumably intended for export<sup>6</sup>. The numbers involved are likely to be very small compared with national use.

The fruits and seeds (processed into powder and oil respectively) of another species of baobab, *A. digitata*, a species native to and widespread in Africa and southwest Arabia (and widely introduced elsewhere) have featured increasingly in international trade for use in pharmaceutical, cosmetics and food products<sup>7</sup>. *A. digitata* is registered by the US Food and Drug Administration as Generally Regarded as Safe (GRAS), which allows *A. digitata* to be used as an ingredient in food products. A similar classification (as Novel Food) for *A. digitata* exists in the European Union. There may be concerns that the future registration of *A. grandidieri* on the European and the USA export markets will lead to an increase in demand for fruit and seeds.

Local harvest comes under general regulations for non-timber forest products<sup>8</sup>. To date, there are no specific government regulations for *A. grandidieri*. The species is considered to have good representation in protected areas<sup>1</sup>, where harvest is prohibited.

On-the-ground implementation projects are under way to establish sustainable production quantities of *A. grandidieri*; an experimental sustainable fruit offtake harvest has been piloted on a commercial basis for a few years<sup>4</sup>.

The proposed annotation is to include seeds, fruits, oils and live plants. Both oils and products containing oils have been recorded in trade. It is unclear whether the use of term 'oil' in the proposal annotation is intended to include finished products, for example cosmetics.

The species was assessed as Endangered against the IUCN Red List criteria (1998); an updated assessment has been made but not yet published.

**Analysis:** *Adansonia grandidieri* is an endemic species to Madagascar where its population is reportedly still numerous, although affected by a range of factors including low regeneration rates and conversion of its habitat. There is harvest for domestic use. Some of this (principally for fibres) is destructive, but the major products harvested are fruit and seeds, harvested non-destructively. Such harvest might conceivably have some impact on regeneration rates in areas where it takes place, although there are no data to support this. Recorded levels of international trade (in seeds and seed products) compared with observed levels of domestic use are very small and appear highly unlikely to have an impact on the wild population. The species would not appear to meet the criteria for inclusion in Appendix II in *Res. Conf. 9.24 (Rev. CoP16)*.

The proposed annotation is to include seeds, fruits, oils and live plants. Both oils and products containing oils have been recorded in trade. It is unclear whether the use of the term 'oil' in the proposal annotation is intended to include finished products, for example cosmetics.

#### Reviewers:

V. Jeannoda, H. Ravaomanalina, D. Mayne, S. Andriambololonera, S. E. Rakotoarisoa, S. Wohlhauser and E. Creuse.

#### References:

Information not referenced in the Summary section is from the Supporting Statement.

<sup>1</sup> Vieilledent, G., Cornu, C., Sanchez, A. C., Pock-Tsy, J. M. L., & Danthu, P. (2013) Vulnerability of baobab species to climate change and effectiveness of the protected area network in Madagascar: Towards new conservation priorities. *Biological conservation* 166: 11-22.

<sup>2</sup> Rakotoarisoa, S.E. (2016) *In litt.* to the IUCN/TRAFFIC Analyses Team, Cambridge, UK (based on species distribution map via geocat.kew.org).

<sup>3</sup> For example, Renala Naturals (2016) [http://www.realanaturals.com/?udt\\_portfolio=products](http://www.realanaturals.com/?udt_portfolio=products). Viewed 24<sup>th</sup> June 2016.

<sup>4</sup> MNP (2015) Procès verbal de la réunion du 24 Juin 2015, MNP Amatobe.

<sup>5</sup> For example, Alibaba (2016) *adansonia grandidieri* <https://www.alibaba.com/adansonia-grandidieri-suppliers.html>. Viewed 24<sup>th</sup> June 2016.

<sup>6</sup> Wohlhauser, S. (2016) *In litt.* to the IUCN/TRAFFIC Analyses Team, Cambridge, UK.

<sup>7</sup> Iwu, M. M. (2014) *Handbook of African medicinal plants*. CRC press.

<sup>8</sup> Raveloson, C. O. & Andriafidison, D. (2014) Les baobabs de Madagascar: quel cadre réglementaire pour leur conservation? *Madagascar Conservation & Development* 9:31-35.