

## PRUNUS AFRICANA

### Farmers' preferences

A study by Cunningham and Mbekum (1993) on the sustainability of harvesting *Prunus africana* in Cameroon found that the species was ranked as the fourth most popular medicinal plant species amongst people interviewed around Mount Cameroon.

A study by Madofe et al (2006) in Tanzania indicates that *P. africana* is among the most preferred species, ranking fourth amongst 10 most preferred and important trees in the study area. Other important trees mentioned by respondents were *Cordia africana*, *Grevillea robusta* and cypress.

### Extent of adoption

According to Cunningham et al (2002), farmers in Cameroon are highly enthusiastic about prunus and have been successful in planting the tree on their farms. At least 3,500 farmers have planted in the last several years. Bark collection in forest areas has greatly increased, and farmers have become aware of the opportunities of producing and selling bark.

Farmer' reasons for planting and perceptions of benefits varied across the region. Three of the most common and most important reasons are the need for:

- A cash-earning enterprise: Prunus has role as a supplementary cash-earning enterprise for farmers. It requires relatively low levels of land, cash and labour.
- An important medicine for home consumption: In Cameroon, prunus bark is an important component for medicines. Traditional doctors use it, as well as individuals treating themselves or their family members.
- A diversity of other uses such as handles for axes and hoes, mulching, firewood, poles and seed sales.

A study by Madofe et al (2006) in Tanzania indicates that prunus is widely distributed in homegardens close to the natural forests and the stock is sparse away from these forests. The study indicates that the natural forest adjacent to the study villages in Rombo had higher population density of prunus (64-120 stems/ha) compared to the Mwanga forests (27-48 stems/ha). The lower population abundance recorded in Mwanga could be due to either cutting of the trees for domestic uses by the communities around the forests or less favourable growing conditions.

### Economics of production

Table 1: Price, maximum yield and monthly revenue of *Prunus africana*

		Year	Price per kg (USD)	Average yield/tree (kg)	Monthly revenue (USD)
Cameroon	Raw bark	2005	0.5	95	67
	Bark extracts	1994	966		

Kenya	Raw bark	2002	2
Madagascar	Raw bark		0.2

Source: Clement, 1994; Cunningham et al 2002; Tieguhong et al 2005; Wrenmedia

A study by Cunningham et al. (2002) on assessing the adoption potential of prunus among small-scale farmers looked at the profitability, acceptability and market potential of *P. africana* in Cameroon in 1995. The study indicates that the NPV of benefits for the production of *P. africana* at the farm-level is 29,010 FCFA (Francs de al Confederation Française Africaine) (USD 60) using a 10% annual discount rate over the 30-year period. The positive NPV indicates that the investment is a profitable one. The flow of discounted net returns shows that the farmer incurs considerable losses in the first three years, during tree establishment. Benefits do not start until year 8 and it is only in the 18th year that the entire investment is repaid. The NPV for a comparable Eucalyptus enterprise shows that, over a 30 year period the NPV is 37,883 FCFA. The figure is 30% higher than that of prunus.

Cunningham (2002) investigated the economic feasibility of planting prunus in three different systems: enrichment planting in Ntingue forest, small-scale farming in Oku and plantation in the lowlands. The study measured the NPV for each of the three systems for a 30 year analysis using discounted rate of 10%. The plantation system had a high NPV compared to small-scale and enrichment systems (Table 2).

Table 2: NPV for small scale farmer, enrichment planting and plantation for a period of 30 years at 10% discount

System	NPV
Small- scale farmer	29,010
Enrichment planting	29,010
Plantation	269,194

Source: Cunningham et al 2002

On a hectare of enrichment planting, net returns are negative for the first three years. At the 13th year after the first bark sales, the total investment is repaid. The peak net returns are observed in the 18th year with discounted net returns of USD 1,314 per ha.

For small-scale farming, net returns are negative for the first three years. Positive net returns are realized beginning in the 8<sup>th</sup> year. By the 18<sup>th</sup> year, the entire investment is paid. The benefits were obtained from the sales of construction poles (8<sup>th</sup> year), bark (13th year), hoe and axe handles (18th year) and salvage value (end of the rotation). The farmer realizes positive net returns from the 15<sup>th</sup> year.

## Marketing

The bark of *P. africana* is used for the treatment of benign prostate hyperplasia. Exports of prunus bark, primarily to Europe, were over 3,000 tonnes per year in the 1990s. Nearly two-thirds of this was harvested in Cameroon (Cunningham and Mbenkum, 1993). In 1997,

worldwide annual exports were estimated at 3225 metric tons of bark with a retail value estimated at USD220 million (Cunningham et al., 1997).

A study by Tieguhong (2004) on development of trade and marketing of Non-timber forest products (NTFPs) indicates that *Prunus africana* is produced in some 21 Sub-Saharan African countries. Cameroon was the biggest exporter of prunus bark and bark extract with annual average exports of 1.5 million kg of bark during the 1980s. This rose to 2 million kg in the early 1990s. Even in 1990/1, with an official ban on exports in force by the Cameroonian government, 3.9 million kg were exported (Cunningham 1997).

According to Ndam and Tonye (2004) prunus is exported mainly to Europe, where France is the biggest importer followed by Spain. Extracts are then exported to other countries.

Figures for the 1990's published in the literature indicate the annual export volume of prunus bark was about 3800 tonnes out of which 2000 tonnes were from Cameroon, 1200 tonnes from Madagascar, 300 tonnes from Zaire, 200 tonnes from Kenya and 100 tonnes from Uganda (Cunningham, 1997). Cameroon accounts for 62% of bark and bark extracts exports, followed by Madagascar 20%, Equatorial Guinea and Kenya 7 % each and Tanzania 4 % (Fig 1).

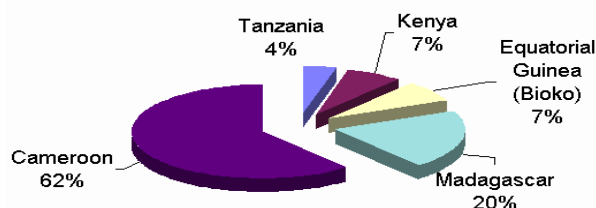


Figure 1 shows export market shares for volumes of bark and bark extract from prunus adopted from Cunningham et al 1997 (Sunderland and Tako, 1999)

A survey by Kyalo (2008) indicates that export volumes for prunus barks in Kenya fluctuated across years from a low of 67,000 Kg per year in 2002 to a high of 450,000 Kg per year in 1998 and 1999. The year 2002 recorded low volumes because the government imposed a temporary trade ban/ moratorium on the bark.

### Prices

According to Cunningham et al 2002, the prices for the bark of prunus depend on bark moisture content and bark quality. The bark with moisture content of up to 12% is 0.51 USD per Kg, while that of above 30% moisture content is 0.27 USD per kg (Table 3).

Table 3: Prices paid for *Prunus Africana* based on bark moisture content and a correction factor based on bark quality by Plantecam factory Cameroon in 1994.

Bark Moisture Content	Price paid (USD/Kg)
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Up to 12%	0.51
From 12.1% to 20.0%	0.45
From 20.1% to 24.9%	0.41
From 25.0% to 30.0%	0.35
Above 30%	0.27

Source: Cunningham et al 2002

### Further reading

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