Indegenous fruit trees and their contribution to household income: case of Dacroydes edulis and Irvingia gabonensis in Elig Nkouma, Cameroon

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Introduction

The humid lowlands of Cameroon is endowed with a number of indigenous fruit and medicinal trees which provide Non Timber Forest Products (NTFPs). These products have a high market value (Falconer 1992; Ndoye *et al*, 1998) and can serve as a source of additional income.

Despite their importance, information on the yields and status of production is not available. Research has been carried out and data available on the quantities of NTFPs marketed in the humid lowlands of Cameroon at the national and regional level (Ndoye *et al*, 1998). However, data on the yields at the household level is scarce.

Objectives

To quantify the yields of individual *Dacryodes edulis* and *Irvingia gabonensis* trees in different cropping systems

- To estimate the income generated from *Dacryodes edulis* and *Irvingia gabonensis* and their relative importance in the household budget

Methodology

Study site

Elig Nkouma is located about 60km from Yaounde, Cameroon. The site was selected based on the following criteria:

- Proximity of the village to the markets
- The abundance of D. edulis and I. gabonensis

Choice of species:

Plate 1 : Dacryodes edulis (African Plum)

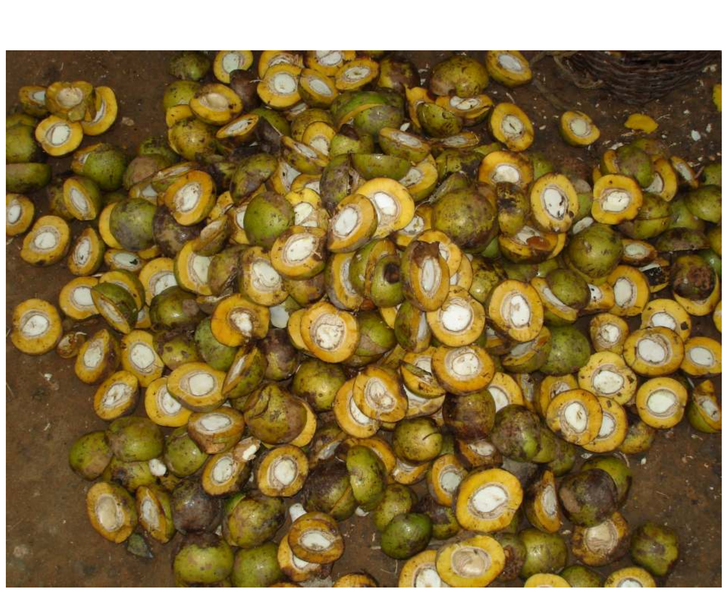


Plate 2 : Irvingia gabonensis (bush mango)

Sampling and data collection

1. Assessment of yields

For *Dacryodes edulis*, 3 trees were sampled per age category (10-30 years, 31-60 years and > 61 years) in each of 3 production systems (homegarden, cocoa plantation and food crop /fallow fields). Likewise, for *Irvingia gabonensis*, 3 trees were sampled per age category but only in 2 cropping systems (cocoa and food crop fields).

2. Estimation of the contribution of these species to household income

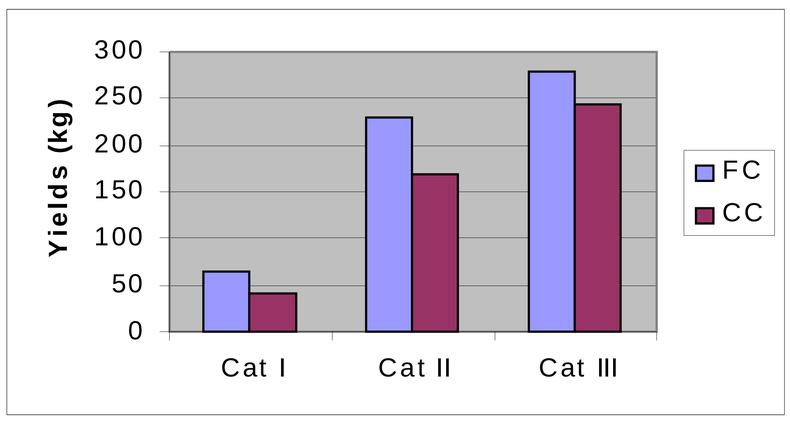
60 households were randomly selected for interview using a questionnaire.

Information on marketing was gathered through observation and holding informal discussions with key persons (farmers, traders, taxi drivers)

Results and discussion

- Yields of I. gabonensis in two cropping systems

Figure 1 shows the variation in yields of Irvingia gabonensis in the food crop/fallow and cocoa fields.

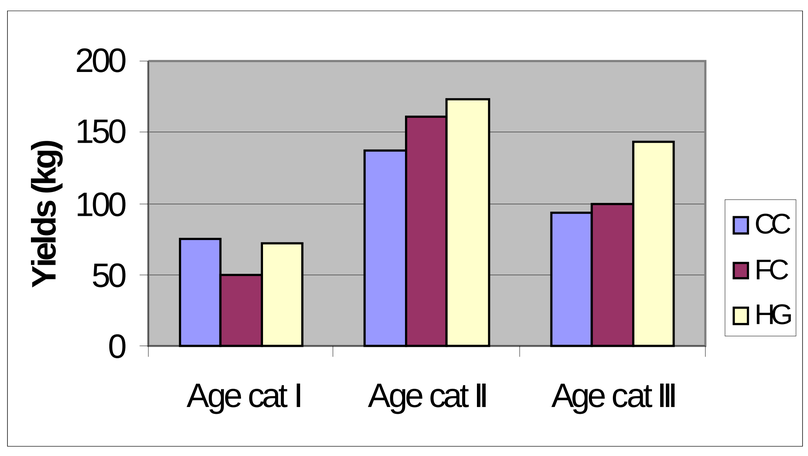


FC – Food crop/fallow fields; CC – Cocoa fields;

Figure 1: Fruit yield in different cropping systems for I. gabonensis

Yields of *Dacryodes edulis* in three cropping systems

Figure 2 presents the variation in yields and age category of *D. edulis* in three cropping systems



CC – Cocoa fields; FC – Food crop/Fallow fields; HG – Home garden; Age cat- Age category

Figure 2: Yields in three cropping systems for Dacryodes edulis

Age-yield profile of *Irvingia gabonensis* and *Dacryodes edulis*

Figures 3 and 4 show the age – yield profile of the two species. Yields from *I. gabonensis* ranged from 3 kg/tree to 368 kg/tree As for *D. edulis*, the yields ranged from 4 kg/tree to 198 kg/tree.

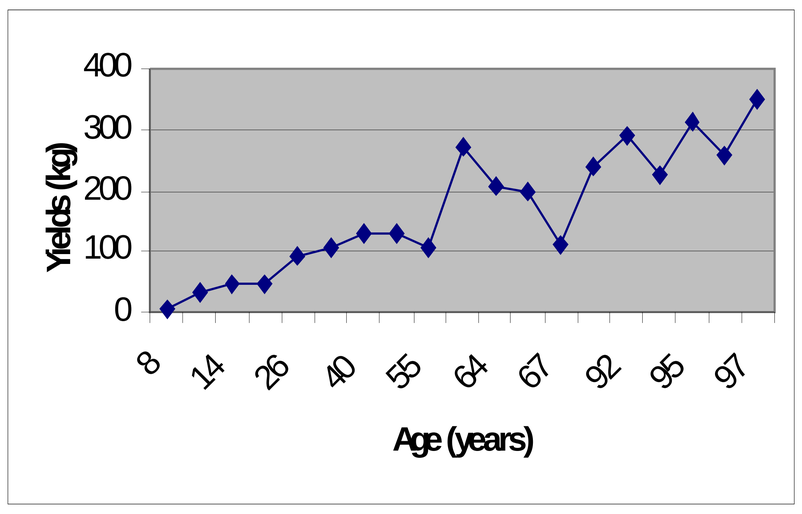


Figure 3: Age-profile of I. gabonensis

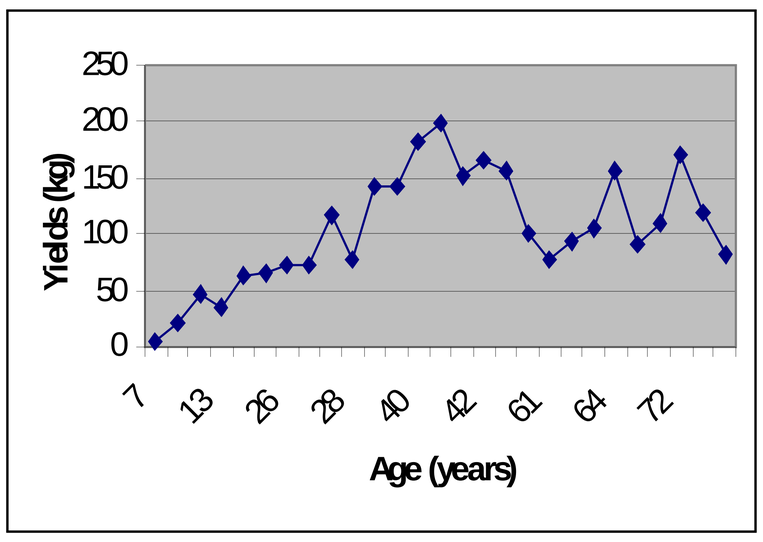


Figure 4: Age-yield profile of Dacryodes edulis

Quantity harvested, consumed and sold per household

Women are mostly involved in the exploitation and commercialization of these products. Quantity harvested, consumed and sold per household for that production season is presented in Table 1.

Table 1 Quantity of Dacryodes edulis and Irvingia gabonensis fruits harvested, consumed and sold per household

Species	Harvested	consumed	sold
D. edulis	441.8 kg	122.5 kg (27.7%)	316.5 kg (71.6%)
I. gabonensis	380.8 kg	111.2 kg (29.2%)	269.9 kg (70.7%)

Plate 3 : Sales of Dacryodes edulis

Income generated from the sales of Dacryodes edulis and Irvingia gabonensis

Households in the study site receive a substantial amount of income from the sales of D. edulis and I. gabonensis. Table 2 presents income generated from sales of the two species.

Table 2: Income generated from the sales of Dacryodes edulis and Irvingia gabonensis

	Income generated (Frs. CFA)		
Species	Minimum	Maximum	Mean
D. edulis	9,880 (US$ 19.76)	92,055 (US$ 184.11)	30,450 (US$ 60.90)
I. gabonensis	2,620 (US$ 5.24)	50,750 (US$ 101.50)	13,357 (US$ 26.71)

Contribution of D. edulis and I. gabonensis to household income

The highest income came from cocoa production. In come from indigenous fruit trees (D. edulis and I. gabonensis) was estimated to represent about 23.5% of total income generated for that cropping season per household (Figure 5).

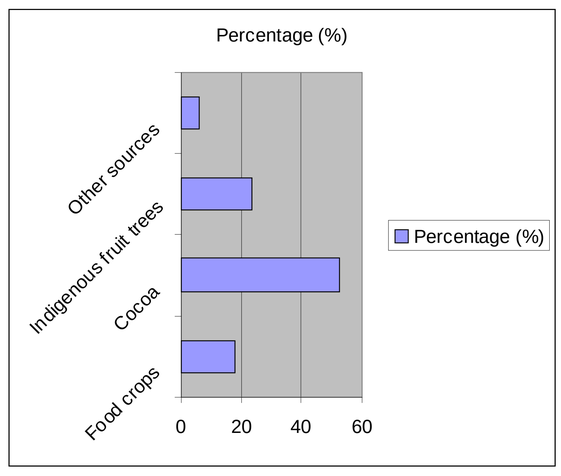


Figure 5: Household income distribution in Elig Nkouma

Conclusion

Yields of individual D. edulis and I. gabonensis tree vary depending on the age of the tree and the cropping system with more yields recorded for I. gabonensis in food crop fields and more yields recorded for D. edulis in homegardens These species contributes to household nutritional as well as household income representing 23.5% of total income generated for the cropping season per household.

Acknowledgment

This work was carried out under the ICRAF West and Central Africa programme in Cameroon for which we are very grateful.

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