

Production of insecticide oil from the *Carapa* tree (Kobi) in southern Mali: Traditional values and economic potential

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INTRODUCTION

Trees of the genus *Carapa* (local name: Kobi) (Fig. 1a) are associated with forest habitats. *Carapa* oil has been traditionally used by people in Mali for a long time (Fig. 1b), however, it is progressively substituted with chemical products. It has been recently discovered that *Carapa* oil can be used as biological insecticide to protect organically grown cotton. This property offers great potential to integrate economical and ecological interests: on the one hand, small-scale income for rural populations can be generated through participation in the cotton market (Fig. 2). On the other hand, the awareness of environment conservation among local populations is expected to increase through the correlation between the continuity of *Carapa* trees and protection of its habitat (incl. water reservoirs). To this end, we aimed to establish a direct link between oil and cotton producers with a special focus on peasant women since oil-production is traditionally their task.



Fig. 1a. *Carapa velutina* in Mali; b. Preparation of *Carapa* oil in Mali

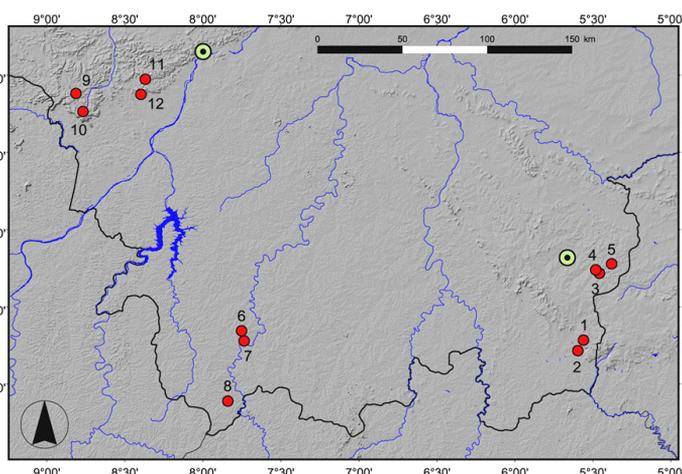


Fig. 3. 1: Woroni; 2: Kadjeradougou; 3: Mamouroubougou; 4: Daresalame; 5: Saniéna /Mamadougou/Kalifa-Diassa; 6: Madina Diassa/Toumanibléna; 7: Kanoubougoula; 8: Djanguemerina; 9: Tomboni; 10: Nafadji; 11: (Cascade de) Siby; 12: Guenakoro

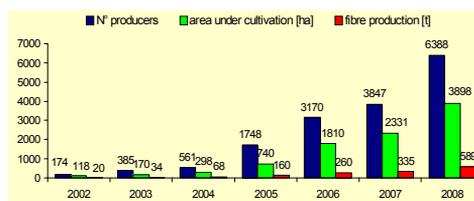


Fig. 2. Organic cotton is a developing market in Mali. Source: Helvetas, <http://www.helvetas.org>

METHODOLOGY

1. We collected information on the experiences and perceptions of local populations relating to *Carapa* (interviews in 13 villages + additional information from 4 villages) and identified relevant persons involved in oil production. A rough estimation of the dimension of local *Carapa* populations was done to evaluate the local potential for oil production.
2. We organized oil production and contact between oil and cotton producers. The interest and facilities of oil producers to expand and schedule oil production were evaluated, aiming to set up a practicable annual production cycle and the replantation of *Carapa* in its natural habitat.

RESULTS

1. Interviews: We visited nine oil-producing villages (69%) and four non-producing villages (31%), interviewing 109 participants (68% women; Fig. 4).

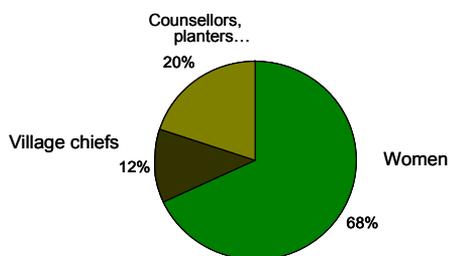


Fig. 4. Distribution of participants involved in interviews

2. Traditional use of *Carapa*:

Oil:

- Body lotion for humans: wounds, skin diseases, insect repellent
- Treatment of insect bites of domestic animals
- Drug against gastro-intestinal diseases
- Soap production
- Crop preservation

Dried bark or roots:

- Drug against gastro-intestinal diseases

Leaf decoction:

- Analeptic bath

3. Change in traditional use : 92% of villages consider products as very important, but 54% report a decline in the traditional use of *Carapa* products. Why?

- Oil production is very labour-intensive
- Introduction of chemical substitutes
- Lack of financial benefits lowers interest of young women to engage in the production cycle
- Loss of traditional knowledge once that oil production is abandoned

4. Resource and oil availability: Except for one, all villages describe a general decline of *Carapa* populations. Seed collection sites are often exploited on a high level. Protection measurements are virtually only passive. Nevertheless, oil production could be increased in all study regions immediately:

- To date, only small demand for oil
- Significant *Carapa* populations are not exploited due to long distance from village
- Re-activation of oil production in formerly producing villages

5. Interest of population: Currently, oil production is mainly driven by the needs of local populations. Recently, the interest in the potential benefits from organic cotton has increased:

- 77% of villages are interested to develop a cooperation with cotton producers and to increase oil production.
- 85 % of villages are interested to participate in replantation

6. Temporal constraints: Fructification period of *Carapa* interferes with other essential agricultural activities!

- timing coordination between oil and cotton producers
- efficient organization of oil production through the formation of local cooperatives.

RECOMMENDATIONS

- Replanting within the natural habitat might prevent obsolescence of existing populations, enhancing sustainability, and maintaining important forest habitats and water resources.
- Development of an appropriate production cycle satisfying the requirements of both cotton producers and local populations.