# Non-Timber Forest Products in Lomié (Eastern Cameroon): utilisation, sustainability and potential income generation for the local population

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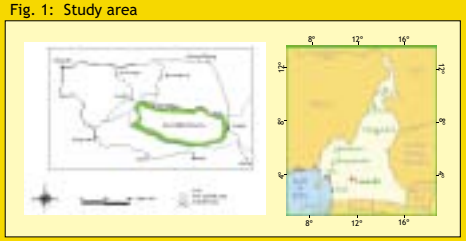
## Introduction

The Non-Timber Forest Products (NTFP) is a global term indicating all the products from the forest, other than wood. However in certain cases, NTFPs include wood used by the local population for domestic uses. The studies of the CIFOR on the markets of the NTFP in the great urban centres in Central Africa, particularly in Cameroon shows a great margin profit by retailers (NDOYE 1995a, 1995b; NDOYE et al. 1998). It becomes then important to analyse whether Non-Timber Forest Products can bring substantial incomes to producers, especially in the remote areas where sources of income to local people are very limited. The present study describes various uses of NTFPs in Lomié Region and the sustainability of those uses, and discuses ways to show that trading in these products could be improved to contribute to income generation for local populations.

## Study area

The present study concerns the area of Lomié, East Province of Cameroon, located at about 300 km from Yaoundé, the capital city. This area is a humid tropical zone with an annual average temperature of 23.8°C and an annual average rainfall of 1643 mm. It is a remote area with difficult accessibility. It is close to the Dja Wildlife Reserve (fig. 1), a world heritage.

Fig. 1: Study area




## Methodology

The methodology adopted to carry out this study involved social research and forestry inventory. The following steps were adopted:

At village level: villages in the area of Lomié were selected: RRA/PRA, direct observations and semi-structured interviews were used to collect informations. Interviews were focused on the following key groups: Baka-pygmees and Bantu villagers, resource persons and representative of local government.

At market level: three markets were concerned with this study: Lomié, Abong-Mbang and Yaoundé markets. At this level, direct observations, structured and semi-structured interviews on retailers, hairdressers, representative of administrative institutions and workers of international organisations (NGOs) such WWF and IUCN, as well as local NGOs such as CIAD and PERAD were carried out.

At the forest level: forest inventory has been carried out to determine the density and production of the plants that produce NTFP, in order to appreciate the regeneration and the sustainability.

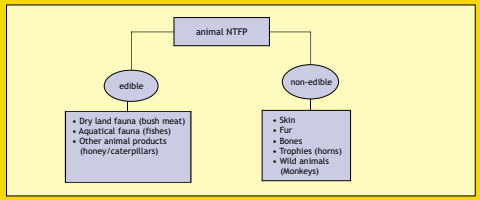
## Results

### 4.1 NTFP from animal species : utilisation and income generation

The NTFP from animal species mostly used in Lomié region is the bush meat. Other animals' products utilised in the area, but which play lesser roles are caterpillars, fishes and honey (fig. 2). Unselective hunting involves both protected animal species such as gorillas, chimpanzee etc. and non-protected animal species. The most hunted are Cephalophus, Cercopithecus and Atherurus.

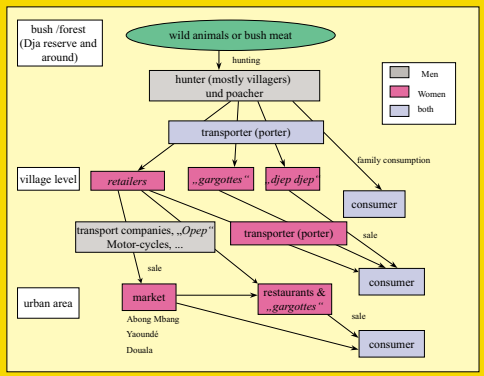
In the study area (all) the local communities recognise themselves as hunters. They hunt for home consumption and for sell. They are in conflict with the law (they have no hunt permit and they use prohibited material). The bush meat trade is known to be flourishing and profitable. Various actors are well represented (local and such from the great urban centres such as Yaoundé and Douala). Hunting is mostly the activity of men, women play an important role in the retailing, as managers of "gargotte" (a kind of restaurants) and "djep djep" (selling pieces of cooked meat in basket) (fig. 3).

Fig. 2 : NTFP from animal species in the study area




For generating income, hunting is in the region an easy way to generate income if compared with other alternatives found out, for example agriculture. A hunter can earn at least 200000 FCFA (330 €) per month while the monthly salary of a Forestry Graduate in Yaoundé does not exceed 150000 FCFA (250 €). The monthly rough margin profit has been estimated to be 74804 FCFA (125 €). In terms of comparison, PAUL DE WACHTER (1995) in TCHAPI (1997) found out, that the incomes generated by the cocoa culture in that area were about 30000 FCFA (67 €) /month.

Fig. 3: Bush meat trade in the study area




### 4.2 NTFP with plant origin: utilisation and the potential generation of income

112 trees species, 22 liana species, 17 grass species and 5 Palm trees, which were identified as NTFP producers are utilised in various ways (fig. 4).

Collecting plant NTFP is an activity dominated by women and is non profitable. The marketing of vegetative NTFP is still dominated by the barter system and it remains rudimentary if compared with the marketing of the bush meat which is very dynamic. No retailer was identified in Lomié.

The density of the plants producing NTFP in the forest is very low. Long distance coupled with difficult access to the NTFPs makes the transport costs expensive.

Based on direct observations and on market analyses the following NTFP were identified as potentially important to generate income: oil of moabi (Baillonella toxisperma), wild mango (Irvingia gabunensis), Rattan and Kola nuts.

The oil of moabi is produced from the seeds of the tree Baillonella toxisperma. It is used as cooking oil and in traditional healing. It is the only vegetative NTFP in Lomié that generates substantial income. It generated in 1998/99 59000 FCFA (98 €)/household (local market).

It was found however that the market for that oil is still very small and informal. This product is also said to be informally exported to Gabon.

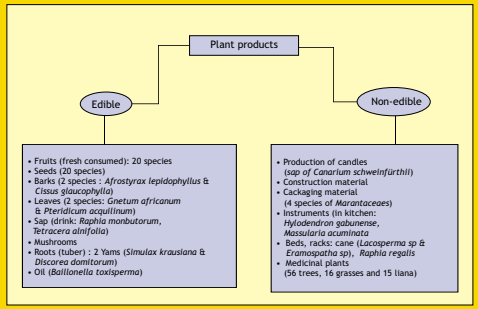
Disadvantage: in the forest, the density of this tree specie is very low (0.09 trees/ha). The production of seed occurs once in every 3 years and it is very low (26.1 dry seeds/ha). The recorded regeneration was stepped as not enough.

**Irvingia gabonensis (wild mango)**

The wild mango tree delivers seeds which are used as spices in seasoning sauces. The local populations consume a little quantity of this resource. Marketing of this product exists in Lomié but at a small scale (fast negligible in comparison with moabi). But in Yaoundé and Abong Mbang, this product is in high demand.

The market value was evaluated to 75966 (127 €) FCFA/ha. The regeneration was stepped as enough.

Fig. 4 : NTFP from plant species in the study area




**Rattan**

Rattan is used for house construction and in the manufacture of furniture. Women make baskets from the cane and earn 1000 FCFA/basket. The cane manufacturer (only 2 persons in Lomié) earn up to 30000 FCFA/mouth. Rattan became rare in the great centres like Yaoundé and Abong Mbang. Which means that the rattan (rough) of Lomié can be sold very well in Yaoundé for example. Transport remains a great problem. A bundle of rattan costing 4000 FCFA in Yaoundé is sold at 500 FCFA in Lomié. An economic analysis is recommended to prove the profitability of this trade.

Other products such as seeds of Ricinodendron heudelotti, leaves of Gnetum africanum, seeds and bark of Afrostyrax lepidophyllus have a high market in Yaoundé but low local market. Fruits of Tetrapleura tetraptera, seeds of Canarium schweinfurthii, seeds of Voakanga africana are not at all used locally but their market exists in Yaoundé and in other part of Cameroon. For those products, sensitisation of populations towards better understanding of the market mechanisms is needed. The cola nuts are the products with high demand on Cameroonian markets, so that their trade would therefore generate much income in the study area. Unfortunately, their density in the study area is too low (0.3 trees/ha for Garcinia kola and 0.7 for Cola acuminata) and not enough regeneration was recorded.

### 4.3 Sustainability of the NTFP utilisation in the study area

The methods used for hunting (mostly trapping and the use of guns) are non sustainable and illegal. This type of hunting does not allow for selective use in terms of sex, age or the condition of the animal. Beyond that, the hunters have too many traps in the forest. In average, a person has 175 traps in the forest. Some even have more than 300. Some traps are so far in the forest, so that the caught animals putrefy before use.

The profitability of the sale of games makes it interesting that even the foreign hunters comes to hunt there, which further increases the pressure on the faunal resources. The presence of the reserve imposes the application of the sustainable methods of hunting and especially the respect of the law in the matter, that is not at all the case presently.

The collection of vegetative NTFPs seems to be more sustainable. The collecting of the fruits/seeds, of leaves and the gathering of the sap seems not to disturb the ecosystem. The collection focuses only to deck the needs. However for the tree Baillonella which remains a tree-symbol for the local populations, and producing once in every three years, the population collects maximum reserve of fruits during the fruiting period.

Thus, an important food for animals such elephant, gorilla etc., which play a large role in the distribution of the seeds and the regeneration of that tree specie (DEBROUX 1998) is missing. The improvement of the sale of oil of moabi could have a negative consequence for the regeneration, because the producer will try to produce as much oil as possible.

It is also to be feared that, with the collecting of the fruits/seeds (this applies to other fruit trees) only fruits and seeds with worse quality are left in the forest, which could mean, that genetic material for the preservation of species would be worse.

The tree Garcinia kola is particularly endangered. Its bark is completely taken away and after that, the tree dies. The gathering of the sap of Raphia monbutorum is also not at all sustainable. At the end of harvesting the sap, the plant dies.

## Discussion and Conclusions

Games offers good opportunities for income generation to the populations of Lomié. The trade is very profitable. Almost all the household draw their incomes from this activity, which results in pressure on the resources within Dja Wildlife Reserve. Sustainable hunting methods and effective management of the faunal resources are urgently needed. The number of the traps has to go down. Those which are far, are to be given up and to be eliminated. JEANMART (1998) calculated, that 70 traps per hunter are enough in the region for covering of the daily needs (commercial uses inclusive).

It is also necessary to encourage law enforcement.

The collecting of vegetative NTFP may be more sustainable. But their trade is still difficult, so that they contribute little to income generation for households. Only the oil of Baillonella toxisperma is being locally marketed but the marketing of this oil remains informal. There is a need to assist the producers and to provide them with information in order to formalise the market, which can contribute to the increase of the market value of this oil. It is advisable to grant small credit to local population, for the establishment of small mills for the processing of moabi and wild mango seeds in Lomié.

The regional markets from Equatorial Guinea, Nigeria and Gabon are to be explored. There, the demand of some NTFP is very high.

Plants must be introduced in field of farmers using agroforestry methods, especially for cola trees.

## Literature

DEBROUX L. (1998) : L'aménagement des forêts tropicales fondé sur la gestion des populations d'arbres: l'exemple du Moabi (Baillonella toxisperma Pierre) dans la forêt du Dja, Cameroun. Thèse Ph.D., Faculté Universitaire des sciences Agronomiques de Gembloux, Belgique.

JEANMART P. (1998) : Tentative d'élaboration d'un plan de gestion de la chasse villageoise dans la réserve de faune du Dja. Rapport. ECOFAC. Cameroun.

NDOYE O. (1995a) : Commercialisation and diversification opportunities for farmers in the humid forest zone of Cameroon. The case of non-timber forest products. IITA, Yaoundé, Cameroon.

NDOYE O. (1995b) : The markets for Non-timber forest products in the humid forest zone of Cameroon and its borders structure, conduct, performance and policy implications. CIFOR-IITA. Yaoundé, Cameroon.

NDOYE O., RUIZ-PéREZ M., EYEBE A. (1998) : Non-Wood Forest Products Markets and Potential degradation of he Forest Resource in Central Africa: The role of research in providing a balance between welfare improvement and forest conservation. CIFOR, Djakarta, Indonesia.

TCHAPI G. F. (1997) : Etude de la filière chasse commerciale dans la région de Lomié (Est-Cameroun). UICN/DJA - Université de Dschang.