

# **Commercialization of *Prunus africana* (African Cherry): impacts on poverty alleviation in Cameroon**

**By**

**Tieguhong Julius Chupezi<sup>1</sup> and Ousseynou Ndoye<sup>1</sup>**

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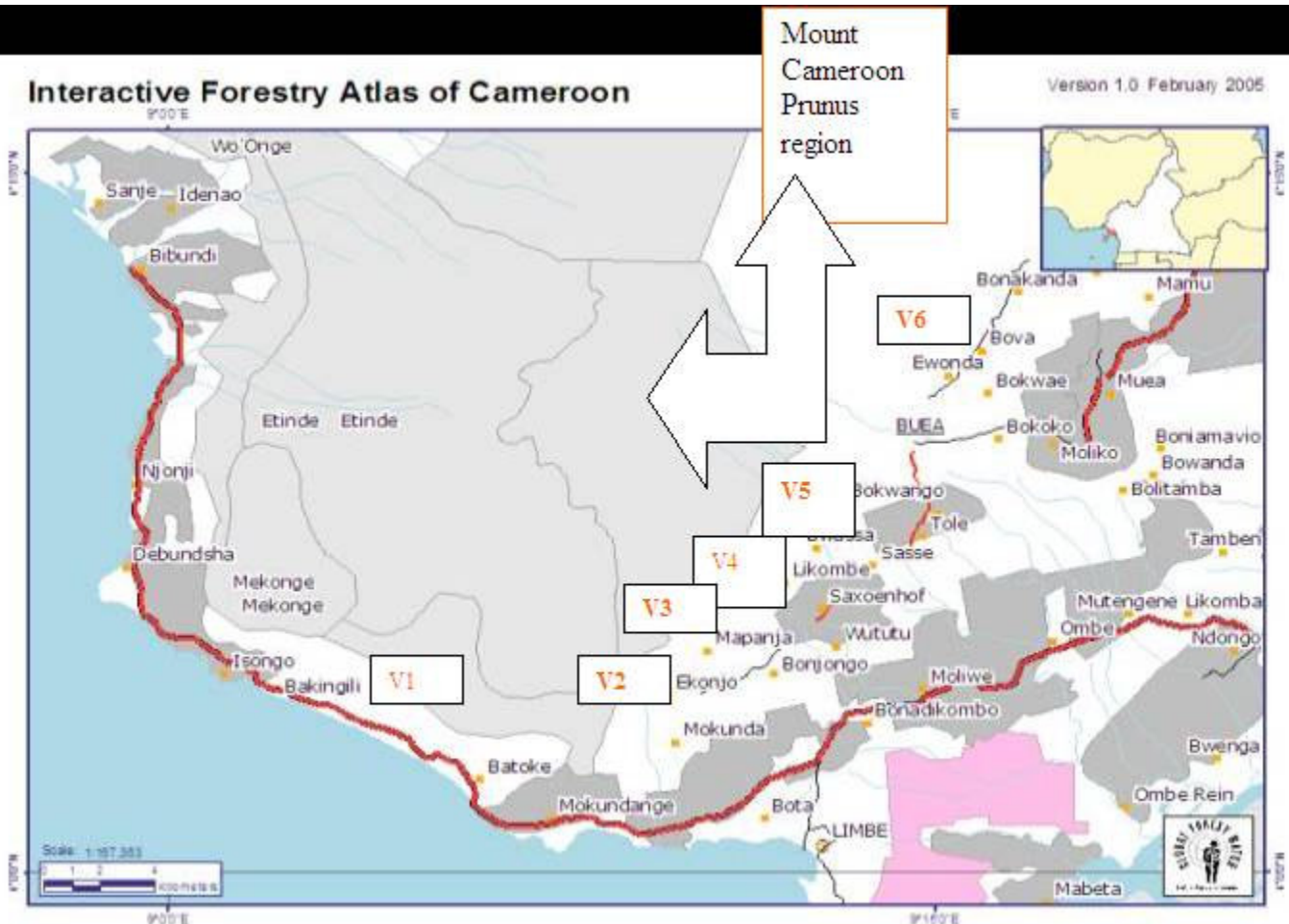
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<sup>1</sup> Center for International Forestry Research (CIFOR), Central Africa Regional Office, Yaounde, Cameroon

## Introduction

This paper was commissioned by the Food and Agricultural Organization of the United Nations (FAO) to make an analysis that highlights a successful example where forestry has contributed or is contributing to poverty alleviation in rural areas of African countries. To this effect, a beneficiary analysis was done for the commercialization of *Prunus africana* (African cherry) on the Mt Cameroon area, where individuals, local communities, and the government are benefiting from the sales of *Prunus africana* barks. *Prunus africana* is a pan-african medicinal montane tree species distributed on the mountain regions of the Southwest, West and Northwest provinces of Cameroon ranging from 700 m to 3000 m altitude (Ndam and Tonye, 2004). However, most of the inferences to this case study are drawn from the Mount Cameroon area located between latitude 3°57'-4°27' N and longitude 8°58'-9°24' E (Tieguhong and Ndoye, 2004). The entire mountain region covers 2500 km<sup>2</sup> with agriculture and forest products harvesting forming the major sources of livelihoods for the populations (Tieguhong et al, 2005). The climatic conditions are diverse with rainfall ranging from 2000 mm in the eastern slope to 10000 mm on the seaward coast. The consequence is a diversity of plant and animal types that earns the region its internationally recognized status as a biodiversity 'hot spot' in Cameroon (MINEF, 2002). Over 250000 people inhabit this area with an annual population growth rate of 3-6% (Ndam and Tonye, 2004) (See Figure 1).

Figure 1: Mount Cameroon Region



The extract from the bark of *Prunus africana* is used for the modern treatment of prostate enlargement. This disorder is generally referred to as benign prostate hyperplasia (BPH), which affects more than 50% of men over the age of 50 in Europe and North America (ICRAF, 2000). *Prunus africana* is produced in some 21 Sub-Saharan African countries but Cameroon is the biggest exporter of *Prunus africana* bark with annual average exports of 1500 tons of fresh bark during the 1980s and 2000 tons in the early 1990s (Cunningham et al, 2002). In November 2003, special exploitation permits with quotas ranging from 20-500 tons per permit were attributed to 24 businessmen totaling some 1750 tons of *Prunus* bark (Betti, 2004) for the national territory. The average yield of bark per mature tree is about 95 kg with a wide variation from 32 kg/tree to 240 kg/tree (Tieguhong et al, 2005). This paper illustrates how benefits from *Prunus* commercialization have translated into poverty alleviation at the individual and community levels in nine villages in the Mt Cameroon area. Over 10000 people inhabit the nine villages in some 1011 housing units. These villages include: Bokwaongo, Woteva, Bova II, Likoko Membea, Likombe, Mapanja, Ekonjo, Upper Boando and Bakingili (Tieguhong et al, 2005). The nine villages constitute the members of the Mount Cameroon *Prunus* Management Common Initiative Group (MOCAP-CIG) that was created in August 2000. MOCAP-CIG controls and manages *Prunus* harvesting and sales on behalf of its members. The following sections give a more detailed account on how useful the revenue from *Prunus* is to the different stakeholders.

### **Benefits to individual harvesters**

In the mount Cameroon area, a harvester collecting 32 kg of bark per day can earn an average US\$ 10.8<sup>2</sup>. Those who are not members of MOCAP earn between US\$ 6.4 to US\$ 9.6 from the same quantity of product sold to a different company. The current price of *Prunus africana* bark received by harvesters is set at 180 FCFA (US\$ 0.36) per kg. This was a negotiated price between the buying company (CEXPRO Sarl Douala) and the local organization MOCAP-CIG during a meeting held in 2004 in GTZ-Buea (MOCAP, per. Com). All the harvesters said that the current price they receive is better than what they used to receive before the creation of MOCAP-CIG. However, only six percent of harvesters are satisfied with that price, while 94% of them think that the expected price should vary between 200 (US\$ 0.4) and 600 FCFA (US\$ 1.2)/kg with a mean of 313 FCFA (US\$ 0.63)/kg (Tieguhong et al, 2005). However, in other parts of Cameroon, the price per kg is far lower. For example, 120 FCFA (US\$ 0.24) in Kupe-Manenguba and 80 FCFA (US\$ 0.16) in Oku Community forest area (Northwest Province).

Looking at the income and price expectations, it is worthwhile to examine their implications for poverty reduction and the achievement of Millennium Development Goals (MDGs) in the Mount Cameroon area. The World Bank Development Indicators show that 40% of the Cameroonian population still lives on less than one dollar a day (World Bank, 2004). In the Mount Cameroon area, *Prunus* harvest is a lucrative livelihood activity for local harvesters. From the first 100 tons of *Prunus* allocated to MOCAP-CIG by the Cameroon government, eight months earnings of individual harvesters were calculated to range from 124660 FCFA (US\$ 249) to 422900 FCFA

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<sup>2</sup> A harvester from a MOCAP member village who harvests 32 kg is paid for 30 kg at 180 FCFA/kg because 2 kg is earmarked for the payment of supervisors, while for harvesters from other villages they are paid for all the 32 kg because they incur no cost for supervision.

(US\$ 846) with a mean of 266486 FCFA (US\$ 533). This average revenue from *Prunus* approximates Cameroon's per capita Gross National Income (GNI) of US\$ 550 (World Bank, 2004). This is interesting because the harvesting lasted only eight months and the harvesters were also engaged in other activities such as farming, petty-trading, gathering of fuelwood that are not included in this assessment. To further assess the poverty reduction potential of *Prunus*, the monthly revenue obtained by each harvester was calculated. The result showed that the average monthly revenue from the harvest of *Prunus* bark was 33,310 CFA Francs (US\$ 67) with variation from 15583 FCFA (US\$ 31) to 52863 FCFA (US\$ 106) (Tieguhong et al, 2005). This means that *Prunus* harvesting provides more than one dollar a day to farmers involved in the harvesting and trade, which shows its poverty reduction potential

### Community Benefits

According to the benefit-sharing scheme of MOCAP-CIG, 15.4% of the revenue from *Prunus* harvested and sold goes into the Village Development Fund, 69.2% to individual harvesters, 11.55% for MOCAP-CIG's management and monitoring activities and 3.85% as government tax. Out of the 15.4 community share, 90% is shared equally for village development projects (member villages), 7.5% is shared among the natural resource custodians (chiefs) and the remaining 2.5% is given as compensation to the host village. This can be illustrated by using the first 100 tons of *Prunus* harvested from Mapanja. According to the roles of the benefit sharing scheme, benefits to nine custodians (chiefs) is made in cash (33330 FCFA (US\$ 66.7) each) while payment to villages (400000 FCFA (US\$ 800) each) are made through development projects that are identified and agreed upon by the villagers themselves. This summed up to 3.6 million FCFA for the nine villages and 100000 FCFA (US\$ 200) given to host village (Mapanja) as an incentive.

Several community development projects that were identified by the villagers are already being realized in the Mt Cameroon area. Projects varied from construction of community halls to the provision of potable water sources. Some villages identified more than one project, while others identified only one. Five of the nine villages (56%) identified the construction of a community hall as an important project in their villages. In three of the villages (33%) where there was no portable water or where portable water had not reached other quarters of the village, water projects were considered the most prioritized projects (Tieguhong et al, 2005). The villagers believe that water is the source of life, as they require water to bathe, cook and drink. In the absence of good water in the village, they are sick, their clothes are dirty, and they are generally unhappy because they have to work very long distance to fetch water. This is crucial to livelihoods because only 41% of the rural population of Cameroon has access to improved drinking water (WHO/UNICEF, 2004).

Unique projects to individual villages included electricity, assistance to health center, assistance to a school and building a market. Electricity and market structures are good signals of development. Goods produced in local communities must be sold and this is better done in a marketplace where everyone can be aware of the prevailing market prices. Two villages (Bakingili and Woteva) used part of their community revenue to follow up their request for community forests in Yaounde, and interestingly they have recently been attributed community forests. In the nearest future, *Prunus* shall be harvested from these forests, but the contention is whether the revenue sharing system shall remain the same as when the forest was under the ownership of government.

## **Benefit to Government**

In 2003, a total of 27828.7 tons of NWFPs worth over 278 million FCFA (US\$ 556000) as regeneration tax were attributed to exploiters. Out of this, *Prunus* represented 1750 tons, which were attributed to 24 business exploiters with quotas ranging from 20 to 500 tons (Betti, 2004). The annual over-the-counter retail value of trade in herbal preparations from *Prunus* is estimated at US\$ 220 million (CARPE, 2001). The government of Cameroon gets revenue from the regeneration tax of 10 FCFA per kg of *Prunus africana* bark harvested. From the harvest and sale of 100 tons of *Prunus* by MOCAP-CIG, 932700 FCFA (US\$ 1865) was paid to government, giving 93.3% tax recovery (Tieguhong et al, 2005). However, more revenue could accrue at local level with further in-country processing of value added products, certification, changes in international trade policies that favour raw material production countries and security of pattern rights for active ingredients.

## **Factors responsible for the success**

1. Product is highly commercialized and sold to an export market and its commercial value is increasing with increasing demand.
2. Increasingly global aging population with increasing global interest in herbal medicines.
3. Existing wild population on the Mountain with annual sustainable exploitation quota of 300 tons.
4. Producer communities are well organized into a Community-based organization, Mt Cameroon *Prunus* Management Common Initiative Group that operates like a limited liability company.
5. Favourable policy framework consistent with the 1994 forestry legislation and the 1999/2000 Finance Law that give communities the right to exploit and commercialize *Prunus*.
6. Well-organized revenue sharing system at community level with equitable benefit distribution.
7. A well-developed sustainable harvest method with local control/monitoring system in place.
8. Institutional support previously from Mount Cameroon Project, Limbe Botanic and Zoological Gardens and presently from the German Technical Corporation (GTZ).
9. Active research by national and international research organizations to fill knowledge gaps.
10. Absence of intermediaries from the trade chain because MOCAP sells directly to the processing and exporting company CEXPRO Sarl. In this light, MOCAP and CEXPRO entered into a community-company deal that has three common objectives of ensuring community development, improved livelihoods and resource sustainability.

## **Problems encountered**

1. Exploitation by other companies on the Mountain with little respect for quota and harvesting methods. This is associated with a major weakness embedded in the annual NWFP quota attribution system that does not specify the area where each company has to

operate. This results in more than one company operating in the same area, with the same objective of getting the maximum quantity of bark. With regards to the Mt Cameroon area, outside companies hire untrained cheap labour from afar and send them into the forest for exploitation without any monitoring or control mechanism put in place. This leads to over-exploitation of wild population and poor harvesting methods.

2. Poor rent capture of 0.35% at the national level, for example, in 1999, the value of *Prunus* harvested from Cameroon was worth US\$ 700000 to the national economy and US\$ 200 million

to the pharmaceutical companies abroad (CARPE, 2001).

3. Low regeneration fee (tax) of US\$ 0.02/kg is paid directly to government central treasury and hardly used for regeneration purpose.

4. No local processing pharmaceutical companies for in-country value added products. The processing of *Prunus* in Cameroon involves only drying, crushing and grinding. The crushed and ground product is exported to Europe, America and South Africa for further processing involving extraction and purification to get active ingredients. These are formulated into capsules or tablets, then packaged and sold to final consumers. About 400 kg of fresh bark, representing 200 kg of dried bark, are needed to make 1 kg of extract (Cunningham et al. 2002).

5. Corruption and lack of transparency in the annual quota attribution process at MINFOF leads to lower quota to the community-based organization. For example, MOCAP-CIG was attributed 100 tons of *Prunus* under this arrangement in 2004, but in 2005 other companies lobbied and it was allocated a lower quota instead of getting more.

6. Browsing by animals and disasters like volcanic eruptions and fire reduce number of trees.

### **Sustainability aspect**

While no formal management system exists for most NWFPs, the exploitation of *Prunus africana* on Mt Cameroon is governed by the activities of two major exploiters (AFRIMED<sup>3</sup> and MOCAP-CIG<sup>4</sup>) that either make or do not make any efforts to manage the commercial harvest. The exploitation of *Prunus* bark by MOCAP is governed by a control/monitoring system that assesses the state of harvesting, the respect of quota allocated and the equitable sharing of the benefits that accrue. On the other hand a company like AFRIMED is headquartered in Bafussam (400 km from Mt Cameroon region) and has an annual exploitation allocation of 500 tons that is far and above the total yearly exploitation tonnage of 300 tons allowed for by the Mt Cameroon region's *Prunus* Management Plan (Ndam and Ewusi, 2000).

Because of a major weakness embedded in the NWFP licensing system, whereby an exploiter is allocated a certain tonnage to exploit without specifying the region from which to carry out the exploitation, AFRIMED has found the niche to get a large portion of its 500 tons allocation in the Mt Cameroon region. Here, the company sets exploitation camps in Munyenge, Bomana and Mapanja forests manned mostly by labourers from outside the region that operate with impunity (Njie, 2004). According to a report by a

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<sup>3</sup> Private sector enterprise with headquarters located 400 km from Mt Cameroon

<sup>4</sup> Mount Cameroon *Prunus* Management Common Initiative Group, a community-based organisation.

joint monitoring and control operation by MOCAP/GTZ and MINEF, AFRIMED adopts the most unsustainable methods of *Prunus* exploitation, involving:

- Completely debarking of mature trees, thus reducing chances for survival for subsequent exploitation.
- Debarking the roots of trees.
- Cutting down of trees with machetes and chainsaws and
- Debarking of young immature (<30 cm dbh) trees
- Felling by setting fire at the bottom of the trees

Contrary to the exploitation methods employed by AFRIMED, MOCAP-CIG has as one of its primary objectives to ensure sustainable exploitation of *Prunus* on Mt Cameroon. This is achieved by ensuring that harvesting is organized with rules and sanctions governing harvesting and supervision. One could coin this as ecological sound harvesting involving the removal of bark in strips (dividing the tree bole into four strips and harvesting two opposite strips) from 1.3 m above ground level to the first branch. Once a tree has been harvested, it can only be harvested again after 5 years when the part of tree earlier harvested has been refilled with bark. During the second harvest, only the two other strips that were not previously harvested are removed. This ensures that a tree can be harvested several times with a 5-year rotation. All harvested trees are tagged and the harvesting supervisor ensures that the norms of harvesting are respected. New harvesters are trained on correct harvesting techniques. Harvesting that respects the norms of sustainability result in the production of mature and quality barks.

MOCAP also has as objective to monitor the exploitation of forest resources in the Mt Cameroon region in collaboration with Ministerial services, NGOs and other groups engaged in the management of *Prunus* and other forest products. MOCAP, MINFOF and other partners such as GTZ form an active vigilant group that carries out monthly monitoring and control exercises to ensure that harvesting methods are respected. Another important component of MOCAP is to ensure the regeneration of *Prunus* by encouraging farmers to plant.

## **Conclusion and recommendations**

*Prunus africana* is a major economic resource for the harvesters, the government and the communities around the Mt Cameroon area. To the local economy of the Mt Cameroon people, greater local participation in *Prunus* production and trade has resulted in more community development and financial benefits to nine villages that are affiliated to the Mt Cameroon *Prunus* Management Common Initiative Group (MOCAP-CIG) than to those outside the organization. To the individual harvester, revenue from *Prunus* assists in meeting basic household needs and responsibilities, whereas the share of revenue allocated to communities go a long way in financing the realization of development projects. The Cameroon government benefits from the volume-based regeneration tax. Success is associated with the fact that MOCAP-CIG operates as a limited company with a well-defined management structure, a well-developed benefit-sharing mechanism for stakeholders, direct partnership with purchasing company as well as a well-developed monitoring and control system for exploitation. The fact that the Cameroon quota

allocation policy allows more than one company to operate in a given area poses a major problem to the realization of sustainable exploitation of *Prunus* on the Mountain. Putting this into consideration, it would be worthwhile to ensure that all companies needing *Prunus* from the Mt Cameroon area go into partnership/commercial deals with MOCAP-CIG. Therefore, policy changes in relation to site-specific exploitation by valid permit holders and enhancement of law enforcement are required in the area. This would result in greater benefits to harvesters, communities and government of Cameroon, as well as ensures the sustainable exploitation and supply of the resource to the companies.

## References

Betti, J.L. 2004. Politique forestiere sur les produits non-ligneux au Cameroon: Vers une maitrise de l'assiette fiscale. Actes de la 5<sup>eme</sup> Conférence sur les Ecosystèmes des Forêts Denses et Humides d'Afrique Centrale (CEFDHAC). 24-26 Mai. IUCNROCA. Pp 348-56.

CARPE (Central African Regional Programme for the Environment). 2001. Rich forests, poor countries: Adapting forest conservation to economic realities, CARPE Information Series, No. 10. USAID. Washington D.C.

Cunningham, A.B., Ayuk, E., Franzel, S., Duguma, B. & Asanga, C. 2002. An economic evaluation of medicinal tree cultivation: *Prunus africana* in Cameroon. People and Plants working paper 10. UNESCO, Paris.

ICRAF (2000). Analysis of the US market opportunities for *Pygeum*. Unpublished report, the International Centre for Research in Agroforestry, Nairobi, Kenya, 34p.

MINEF. 2002. Forest management plan for the Mokoko River Forest Resources. April 2002-March 2007. 111pp.

Ndam N. and Tonye, M.M. 2004. *Prunus africana* on Mount Cameroon: A case study of the production-to consumption systems. In: Sunderland T. and Ndoye O. (Eds). Forest Products, Livelihoods and Conservation. Case studies of Non-Timber Forest Product Systems. Vol. 2 -Africa. Pp 37-52.

Ndam N. and Ewusi, B.N. 2000. Mngement Plan for *Prunus africana* on Mount Cameroon. LBZG. MCP. 46 pp.

Njie, E. 2004. MOCAP CIG and chiefs of the Mt Cameroon region. *Prunus africana* exploitation on Mt Cameroon. Meeting report. GTZ-PGDRN Conference Hall. 25 August. 8pp.

Tieguhong J. C., O. Ndoye, and E. J. Ekati. 2005. Community-based NTFP production and trade for rural poverty alleviation and resource conservation: Case of *Prunus africana* on Mount Cameroon, Cameroon. Paper presented at the International Symposium on NTFPs in Victoria, Canada. 25-27 August.



Tieguhong, J.C. and Ndoye, O. 2004. National Analysis of Trade-Related Instruments Influencing Trade in African cherry (*Prunus africana*) and the African grey parrots (*Psittacus erithacus*): Applications and Impacts on Poverty Alleviation and Sustainable Forest Management in Cameroon. Prepared for The Food and Agricultural Organization for the United Nations (FAO). Non-Wood Forest Products Programme. November. 49 pp.

WHO/UNICEF. 2004. Joint Monitoring Program for Water Supply & Sanitation; Meeting the MDG drinking water and sanitation target: a mid-term assessment of progress. 36pp.

World Bank. 2004. The Little Green Data Book. Millennium Development Goals and World Development Indicators. P.56.