

***Prunus africana*: Money growing on trees?  
A plant that can boost rural economies in the Cameroon Highlands**

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## **A plant that can boost rural economies in the Cameroon Highlands**

### *Summary*

Cameroon supports some of the largest populations of the Afromontane hardwood pygeum (*Prunus africana*), a tree used traditionally for timber, fuel-wood and medicine. It is also the raw material for the pharmaceutical industry. Its economic importance is indicated by Cameroon's annual export of 2000 tonnes, providing revenues at exporter level of about 1,320,000,000 Euro. It is also one of the major income sources for forest based communities in the Highlands areas of Cameroon. Pygeum is one of thirteen keystone species in high altitude montane mixed forest, however is an endangered species and its annual trade has been restricted since 1995. Despite the quota based regulatory framework in place and over two decades of research, developing sustainable harvesting techniques and regeneration planting, the species faces major problems of over exploitation, illegal harvesting and degradation of its montane forest habitats. There is no current knowledge of the natural or planted stock of Pygeum, no monitoring system and no long term management plans. This paper looks at methods and activities for the sustainable management of Pygeum and draws lessons for creating win-win situations for sustainable exploitation of this non-timber forest product.

### *Introduction*

*Prunus africana*, locally known in Cameroon as *Pygeum* or *Kirah*<sup>1</sup>, is an evergreen hardwood tree with dark-brown longitudinal fissured bark and simple, thick, leathery, oval, leaves with pointed ends (Figure 1). It grows at 700-3000 metres above sea level, up to a height of 40 metres. It has creamy white flowers and produces black fleshy fruits resembling a cherry when ripe, which are eaten and dispersed by monkeys, birds and squirrels. Seeds can be collected mid-end February or seedlings collected in May-June. It is long lived - up to 100 years and is one of the about 13 critical species, patchily distributed, in the rainy high altitude montane mixed forest ecosystems in Cameroon. The majority of pygeum populations are in the North West (NW), South West (SW) and Adamoua provinces of Cameroon, where they have been extensively exploited for their bark since the 1980s<sup>1</sup>. It is a multiple-use species, locally used as fuel wood and for charcoal, for poles, hoe and axes handles<sup>2</sup>, as a bee loving plant in honey production, in protecting water catchments, as a boundary marker, and especially medicinally for humans and animals; powdered into a tea for genito-urinary complaints, allergies, inflammation, kidney disease, malaria, stomach ache, fever, chest pain, heart burn, madness and for animal medicines. Internationally it is of medicinal economic value. Bark is exported dried, chipped or powdered to USA and Europe to produce an extract used to treat benign prostrate hyperplasia. The extract is also a raw material for the burgeoning health, bio-product, diet supplement and pharmaceutical industry. If the bark is partially stripped according to norms (Cunningham 1993, Hall et al. 2000, WWF 2001,) of two quarter panels from a tree of more than 30 cm diameter at breast height, (approximate age of 12 to 15 years) it will regenerate and may be exploited at between 5 to 15 year intervals without killing the tree. About 2000 kg of fresh bark are equal to 1000 kg of dried bark, which is needed to make 5 kg of extract. An average mature tree yields 75 kg of bark (Acworth 1999).



**Figure 1 Prunus Leaves**

*Prunus* harvesting and export have been regulated<sup>3</sup> as a 'Special Product' since 1994 through a system of non-renewable, tonnage based permits are allocated by auction and quotas, on paper linked to inventory and Management Plans. Since 2006, regeneration by the government falls under the responsibility of ANAFOR. Permits are granted by an Inter-Ministerial Committee, based on technical reports from Provincial Chiefs of Forestry which indicate the species, quantities and areas for exploitation and harvesting modalities. *Prunus* seized as having been illegally harvested (without a management plan or sold to a person with out a special permit) is auctioned at a public sale. The buying price is usually below the current market price. The buyer, who does not have to have a

<sup>1</sup> Kirah – *Prunus africana* in Nso language (Lamnso)

<sup>2</sup> For Berka Ivoline of Mbuluf, Kumbo it is the major economic activity.

<sup>3</sup> Decree No. 74/357 of 17 April 1974; Law No. 81/13 of 27 November 1981; Decree No. 83/169 of 12 April 1983; Law No. 94/01 of 20 January 1994 Forestry Law and its decree of application, Decree No. 95/531/PM of 23 August 1995

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special permit, pays the Treasury. The buyer is also obliged to pay an additional 12% of the buying price to the MINFoF Chief of Post who made the seizure. In practice, the majority of inventories have been done once only by projects e.g. BHFP, Kilim-Ijim and Mount Cameroon, and in Community Forest's Simple Management Plans (SMPs) and do not quantify *Prunus Africana*. The Government of Cameroon has set quotas for the amount of bark which can be harvested each year from provincial zones. Felling of trees, without special permission, is illegal. The Forestry Decrees state that "the Provincial Forestry Service shall provide a *reasoned recommendation* to MINFoF "regarding the suitability of the location, quantity and conditions of exploitation of the species concerned. The Convention on International Trade in Endangered Species (CITES), of which Cameroon is signatory, placed *Prunus africana* as an Appendix II listed species in 1995, meaning *Prunus* is not threatened by extinction, but may be so if trade is not regulated. In 2006 Cameroon and DRC were the only listed countries, previously this included Kenya, Madagascar and Burundi. Producers have to declare exports, to set a "*scientific non-detriment finding*" for any annual quotas and these have to be reported to CITES. It was recommended that Cameroon would within 1 year: inventory standing stock in harvest areas, establish estimates of sustainable off-take and a scientific monitoring system, revise the quota and set out a long term management plan for the species (CITES 2006).

In the NW and SW Provinces of Cameroon, *Prunus* is a major secondary source of income for individuals, NGOs or schools<sup>4</sup> with plantations, traditional medicine practitioners and Community Forests. Anecdotal examples from Kom and Nso<sup>5</sup> support this: Benjamin Mbiydzenyuy from Nseh in the NW states: "When my brother was hospitalised, I peeled a few of this plant that my father planted and was able to raise the 40, 000 FRS. With this, I saw that this kirah can give me much money. I decided to plant more." Pa Ibrahim from Nyaro says he paid for his child's university fees thanks to his small plantation of dry kirah sold for firewood and charcoal. Mr. Wirdzerem calls it "*money tree*" because he was surprised by the revenues. In 2006 and 2005 an estimated 200,000 Euro worth of pygeum was sold by producers and harvesters, annually 2000 tonnes. At export value worth over 2 million Euro annually, based on an the average export price of 660 CFA per kg (almost 1 euro) Between 1985 and 1991, and estimated 9,309 tons of prunus were exported from Cameroon, amounting to at least 143 million CFA (Ingram 2007). The chain in Cameroon involves at least 60,000 people in communities with CFs, an unknown quantity of individuals with plantations, about 500 harvesters, approximately 11 exploitation permit-holding small scale enterprises, and approximately 5 exporting enterprises.

The Nso saying "We can have no wealth beyond a healthy body" is relevant to pygeum; it is seen to bring *both* health and wealth. Research has however indicated that there are substantial in opinion between the regulators (the Ministry of Forestry and Wildlife), the Cameroon CITES scientific authority, the National Agency for Forestry Support (ANAFOR), exporters, forest users, researchers and development organisations on how to exploit sustainably and the quantities available for short and long term exploitation. This is combined with field observations of declining populations, particularly in the NW and SW Provinces. This paper aims to explore activities and methods for sustainable management of Pygeum and draw lessons for creating win-win situations for sustainable exploitation of this non-timber forest product.

**Figure 2 Unsustainable harvesting & poor regeneration, *Prunus africana*, harvested in 2006**  
**Emfveh Mii, March 2007**



<sup>4</sup> The Environmental Club of Kumbo High School is planting over 1,000 trees act as wind breaks and to generate income when matures.

<sup>5</sup> Nso and Kom are tribes in the Western Highlands of Cameroon

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#### *Methodology*

Interviews from July- August 2005 (Whinconet 2005) and November 2006 to March 2007 were held with pygeum users and harvesters, Community forest institutions, private sector exporters, government ministries and administration, traditional authorities, ANAFOR, development organisations. These were supplemented by literature reviews, data gathering, field observations in the NW and SW provinces and 2 rapid inventories in the NW Province.

#### *Results: Unsustainable exploitation threatens a viable Prunus market and biodiversity*

Research (Stewart 2007 and pers comm.), actor interviews and field observations (Ingram 2007), indicate that in spite of, and because of, its economic and social value, wild *Prunus africana* populations appear in major decline. Reasons include:

1. Uncontrolled exploitation, illegal harvesting (out of 1,241 tons harvested from January 2000 to March 2007, 257 tons were illegally, Figure 3) (Ingram 2007) and inappropriate techniques and timing have contributed to poor health of surviving trees. Even if trees were unsustainably harvested initially, subsequent illegal harvesting has resulted in die offs of between 13 to 50% of trees in the NW (Stewart 2003, Ingram 2007) See Figure 4.
2. Bushfires, associated with herders' and farming activities, annually devastates hectares of forest, which pygeum seedlings and mature trees can not tolerate, leading to very low levels of natural regeneration.
3. Grazing by cattle and especially goats, also resulting in almost zero natural regeneration.
4. Unsustainable harvesting (stripping entire trees or even felling) resulting in die-off of between 13 to 50% of natural strands, especially mature seed producers, in Kilum-Ijim.
5. Lack of management (according to the Simple Management Plans SMPs) of natural strands in Community Forests (CFs), resulting harvesting "illegally", lack of enforcement against illegal harvesting, lack of planned regeneration and lack of protection against encroachment and bush fires. CF's Simple Management Plans take years to be processed, inhibiting control over resources, investment incentive and product value. Many CFs also lack necessary management, financial and administrative skills (MOCAP 2007, Ingram 2007).
6. Declines in prunus may have long term consequences for the health of threatened and decreasing Highlands montane ecosystems and their biodiversity, as it comprises one of the keystone species (Masiels & Forboseh 1999).

Constraints identified by actors (Ingram 2007) to developing the Cameroonian sector and increasing local revenues, production and employment, include;

1. Complete lack of knowledge of the state and total amount of the resource of *Prunus* available in the wild and domesticated, in any given year and its location. Even where inventories are recent (Mt Cameroon), actors perceptions of sustainable harvest were over-reported. Costs for permit holders have been increasing to find and transport resources, as increasingly remote areas e.g. Adamoua and Centre province, are exploited.

Notable differences of opinions exist between producers, researchers, exporters and exploiters. Buyers generally report that more than 2000 tonnes is available in Cameroon, but also the increasing time and resources to find *Prunus*. No CFs could give accurate reports of resources in short or long term. Locations of replanted *Prunus*— mostly by private individuals but also through ANAFOR, PAFRA and ONADEF<sup>6</sup>, were also not available. This is compounded by the annual quota system which does not allocate site specific permits and is not inventory based.

**Figure 3 Prunus seized in Oku, December 2005. Approx 5-7 tons**



<sup>6</sup> PAFRA is a reforestation project ended in 2007 and ONADEF the forestry support agency preceding ANAFOR  
SNV & ASEC-NW

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2. Lack of market information and its dissemination;
  - a. On price, among producers and between producers, harvesters and buyers in Cameroon, as well as between exporters and internal buyers and manufactures. This has led to low prices for CFs and harvesters and wide regional variations. Changes in the market structure from the monopoly of Plantecam in the 1980s to the current quota system (Ondigui 2001, MINFoF Decisions 2006 and 2007) also are viewed as inefficient and not business friendly. Most FMIs dealt with different buyers, did not compare prices and did not contact the buyers themselves but were contacted when the buyers were ready to buy. Most did not store and sold "wet" or "fresh bark". The lack of knowledge about market prices and buyers- especially between the SW Mount Cameroon and the NW means prices in the SW can reach 240 per kg for dried bark while in the NW range from 40 CFA to an average 65 CFA per kg for wet bark.
  - b. On methods to add value in the production and transformation (e.g. drying, chipping or extraction)
  - c. On international manufacturers and consumer awareness about pygeum (Pomatto 2001), which potentially could influence buying patterns and the development of alternatives, such as competing natural (e.g. Saw palmetto-*Serenoa repens*, *Urtica dioica*, *Hypoxis rooperi*, *Populus tremuloides*, *Secale cereale*, *Cucurbita pepo*) and synthetic products replacing *Prunus africana* extract (Pomatto 2001).
  - d. Resource availability, such as total sustainable resource available per year and location, amounts harvested per year and total value (for producers, exporters, customs, ANAFOR etc), quantity replanted per area and organisations, quantity destroyed per area (poor harvesting techniques or natural)
3. Expensive, time consuming administrative and bureaucratic requirements and corruption involved in obtaining exploitation licenses, and export permits.
4. Low level of transformation processing (into chips, powder or extract), currently only by 2 or 3 exporters in Cameroon, means little value is added to the product and potential for increasing income, employment and production to alleviate poverty is not utilised.
5. Difficult access to capital to invest in transformation/processing, particularly for community organisations and CFs
6. Lack of quality control and lack certification for export, particularly powdered or chipped products (certifying that the product is *Prunus* and not other barks)
7. Poor governance and transparency: Most FMIs were not able to report on quantities harvested, locations and revenues from sales, who was buying (and therefore the legality), amounts paid to harvesters or how benefits were shared in their community. Most did not report in advance to their MINFoF delegates that they were to harvest (as required by CF procedures). Many CFs were also not harvesting according to the Simple Management Plans (SMPs).

#### *Recommendations*

Radical changes are necessary to the sector to allow continued but sustainable exploitation and enable a win-win between income generation particularly in poor, rural, montane forest areas and biodiversity and sustainable resource use. This will involve;

- A. Sustainable management of wild, forest based pygeum via a national inventory of stands, implementation of regeneration measures, revision of sustainable harvest methods in the light of malpractices and ongoing scientific studies (e.g. Dschang University, ICRAFT), enforcement for of sustainable harvesting methods and monitoring (for example, see Figure 5).
- B. Meeting CITES requirements to ensure continued exports from Cameroon as possible and the sector does not collapse in the short term, with consequences for the all producers and exporters in the chain as well as revenues for Cameroon government and further implications for consumers and possible development of alternative

**Figure 4 Crown die off after harvesting, Emveh Mii, Oku**



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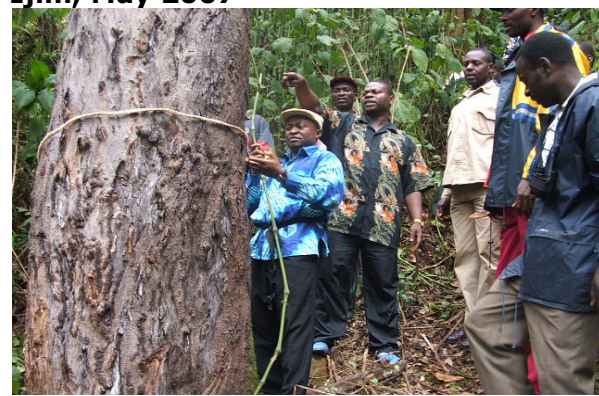
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products and/or sources of *Prunus*. The inventory should reinforce whether *Prunus* remains an "Endangered species".

- C. Promotion of domestication, plantations and individual planting of pygeum (via Government programmes such as ANAFOR, CF, individuals and collaborations with exporters) to counter decreases in wild stocks. This could be linked to increased transparency regarding the use of the Regeneration Tax (2% of the value of the quota value of exploitation permit holders).
- D. Revision of the regulatory system for prunus;
  - Revising the quota system to a location specific
  - Introducing site specific tracing and tracking system e.g. Certificates of Origin
  - Implementing enforcement measures and capacity building for government authorities such as MINFoF, Customs and taxes regarding transportation and permit holders reporting.
  - Streamlining administrative hurdles and increasing business friendly practices in the exploitation permit and registration process for "special forest products" e.g. increasing time period of the permit
- E. Enhancing the market chain;
  - Particularly small and medium sized enterprises and CFs, to operate more efficiently and sustainably;
  - Resource optimisation through sustainable and alternative harvesting methods;
  - Quality control introduced at key stages in the chain e.g. through certification of NTFPs or business in the process;
  - Adding value for Cameroonian enterprises and organisations in processing and transformation such as drying, chipping and extract removal in Cameroon;
  - Reinforcing links with pharmaceutical companies and end users to increase awareness of resource constraints and sustainably and diversify the use of pygeum extract's e.g. for veterinary applications;
- F. Increasing institutional and organisational networks, particularly the collaborations between the regulatory agencies MINFoF and ANAFOR and with exploiters, producers as well as with other institutions with regulatory functions such as traditional authorities and councils; between producers and exploiters, between exporters and international manufacturers and buyers,
- G. Increasing knowledge of the resource and optimising exploitation; for example knowledge of genetic diversity and across the country, and exploring other harvesting options such as harvesting leaves, coppicing and of other harvesting

Further research and development is necessary to address the problems and solutions identified. The following current activities will ensure that many of these issues are addressed; a two year European Commission financed Programme "Mobilisation et renforcement des capacités des petites et moyennes entreprises impliquées dans les filières des produits forestières non ligneux en Afrique Centrale" lead by the FAO with SNV, CIFOR<sup>7</sup> and ICRAFT, started in 2007. Its main results involve reinforcing small and medium sized enterprises in the NTFP sector, developing the *Prunus* chain as a priority NTFP in Cameroon and DRC, reinforcing techniques for sustainable management, particularly harvesting and domestication and ensuring that the institutional and legal frameworks are adapted and functioning, on a national and Central African regional level. SNV is also building capacity in the Cameroon Highlands with the Association of Environmental Education (ASEC-NW) and the Western Highlands Conservation Network (WHINCONET), which includes CFs in Kilum-Ijim, and partners such as MINFoF (Department of NTFPs) and the NW Provincial Delegation, ANAFOR, and the Community Forestry capacity building project (RIGC), the

**Figure 5 Sustainable harvesting methods, MOCAP training in Kilum Ijim, May 2007**



<sup>7</sup> Food & Agriculture Organisation (FAO), International Centre for Forestry Research (CIFOR), World Agroforestry Centre (ICRAFT)

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German Technical Development Agency (GTZ) and the Mt Cameroon Prunus Management CIG (MOCAP). The French Cooperation FORINFO Project is also supporting the NTFP sector in Cameroon; Researchers at the University of Dschang in Cameroon and Institute of Ethno botany, Florida USA are researching genetic diversity, the effects of grazing, fire and harvesting on resource use. ANAFOR is also seeking finances to fulfil its obligations for 2007 to CITES. Further research on the experience in other countries with *Prunus africana* is welcomed and those with similar NTFPs and issues to pygeum.

### *References*

- Acworth J. & Ewusi BN. *Prunus africana*, striving for sustainable & equitable resource management in Cameroon, Mt Cameroon Project, 1999
- ANCO, Proposal for biometric data in the Kilum Moist Montane forest in the Bamenda highlands, Sept 2006
- Chupez T.G., Ndoye O., National analysis of trade related instruments influencing trade in African cherry and the African Grey Parrot, applications and impacts on poverty alleviation and sustainable forest management in Cameroon, FAO Rome, 2005
- Chupez T.J., Ndoye O., Walter S., 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, FAO Non-Wood Forest Products Programme, November 2004
- Cunningham, A.B. Mbenkum, F.T. (1993). Sustainability of Harvesting *Prunus Africana* Bark in Cameroon: A Medicinal Plant in International Trade. People and Plants working paper 2. Paris, UNESCO
- Décision N° 0029/D/MINFOF/SG/DF du 06 avril 2005 et Décision N° 0009/D/MINFOF/SG/DF/SDAFF/SAG, 13 janvier 2006
- Décision N° 139/D/MINFoF/SG/DF/SDAFF/SAG du 02 Mars 2007 Portant octroi des quotas d'exploitation des produits forestiers spéciaux
- Export Quota for specimens of species included in CITIES appendices in 2006, 14.02.06 <http://www.cites.org/index.html>
- Hall J.B et al, *Prunus africana*., a monograph, School of Agricultural & Forest Sciences, Publication No 18, University of Wales, Bangor, 2000 , 2000 and poster version in pidgin »Prunus, no broke chop »
- Linke J. 1998. Note d'information du Projet Mont Cameroun sur *Prunus africanum*. Buea.
- Maisels G & Forboseh P, Phenology of the major tree and shrub species of the Kilum Ijim forest, Birdlife international/MINEF Cameroon, March 1999
- MOCAP, FGF Project "Sustainable management of *prunus africana* by organised community groups in the NW Province using Mocap's initiative and permit", November 2006
- Ondigui Balla R.P., Sustainable Management Of A Wild Plant Species For The Conservation Of Montane Forest Ecosystems And The Welfare Of Local Communities: A Case Study Of *Prunus Africana* In The Mount Cameroon Area, World Mountain Symposium, 2001
- CITIES, PC16 WG1 Doic 1, CITIES 16<sup>th</sup> meeting of the Plants Committee Peru, July 3-8 2006
- Pomatto V., Etude de marche du Pygeum Africanum en Europe, GTZ-MINEF, Septembre 2001
- Samnick.L.N., Hiol F., Determeyer H., Scoping Note; Continuité des activités visant à développer durablement le secteur PFNLE, Capacity Building Project, Juin 2004
- Stewart K.M. The African Cherry tree; Can lessons be learned from an over-exploited medical tree?, Journal of Ethno-Pharmacology , 89, 2003 3-13
- WHINCONET, Report On The Illegal Harvesting Of *Prunus Africana* in the Kilum-Ijim Forests of Oku and Fundong, North West Province, Cameroon, December 2005
- WWF, *Prunus Africana*, 2001
-