Prunus africana Value Chain
The Cameroon Case

6th Panafrican ABS Workshop,
30th Jan – 3rd Feb 2012
Limbe, Cameroon

Presented by Okenye Mambo,
GIZ Cameroon
From Forest to the Drug Stores

Cultivated Stock

On Farm

Wild Stock

Chemical Extraction & Pharmacology
The Red Divide: Trade agreement on plant biomass and Patents

- Extracts and pharmacology
- Patented Drugs
- Patented Food additives
- Patented technology
- Patented products

- Export of processed plant biomass
- National CITES Authority
- Ministry of Commerce
- Customs Department
- Int’l Cons & Devpmt partners
- Forestry export control

High-End Laboratories (Spain, France, Italy, Germany etc.)

Traditional Research Institutions

National Level

International Level
Traditional Knowledge
Prior to modern chemical research, Prunus bark concoctions used by traditional healers as a key component for treating:
- Stomach-aches
- Urinary ailments
- Mental disorder
- Etc

Research and Development
- No documented evidence that pioneer Laboratoire Debat obtained Prior Informed Consent from source countries
- No documented information if Debat needed/obtained authorisation from traditional users or source country
- First patent obtained by Lab. Debat
Chemical compounds
- *Prunus africana* extracts are lipophilic (C12-24) and sterolic (Debat, 1974)

- The active compounds directly involved in the relief of BPH have not been identified and synthesised.

- Identified chemical constituents (Catalano et al., 1984; Bombardelli & Morazzoni, 1997) include: fatty acids: (62.3%), sterols: β-sitosterol (10.7%), β-sitosterol 3-O-glucoside, β-sitostenone (2.0%), pentacyclic triterpenoids: ursolic acid (2.89%), 2"-hydroxyursolic acid (0.50%), oleanolic acid (0.66%), crataegolic acid and friedelain (1.39%), and epimaslinic acid (0.82%), linear alcohols (n-tetracosanol, 0.48%; and n-docosanol, 0.39%) and their esters with *trans*ferulic acid.

Two new compounds have been identified: 24-*O-trans*-ferulyl-2", 3"-dihydroxy-urs-12-en-28-oic acid (Fourneau et al., 1996), and 4-0-β-D-glucopyranosyl-(7,8)-dimethoxyisolariciresinol (Scarpato et al., 1998).
Local Trade partnership on sales of Prunus Bark between MOCAP and AFRIMED Sarl (Benefit Sharing Mechanism)
SYNOPSIS OF PRUNUS AFRICANA MARKET STUDY

Study area:

Europe : (Germany, France, Switzerland, Austria, Spain, Italy)

North America (USA) carried out by ICRAF-Nairobi.
## Major Companies involved Prunus Extract Production

<table>
<thead>
<tr>
<th>Company</th>
<th>Head Quarters</th>
<th>Place of transformation</th>
<th>Product bought</th>
<th>Obtained state of transformation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Groupe Fournier (2001)</td>
<td>France</td>
<td>France</td>
<td>Bark powder</td>
<td>Purified extract</td>
</tr>
<tr>
<td>Indena</td>
<td>Italy</td>
<td>Madagascar</td>
<td>Dry bark</td>
<td>Crude extract</td>
</tr>
<tr>
<td>Extractos Natra</td>
<td>Spain</td>
<td>Spain</td>
<td>Bark powder</td>
<td>Crude extract</td>
</tr>
<tr>
<td>Madaus (Euromed)</td>
<td>Spain</td>
<td>Spain</td>
<td>Chopped bark</td>
<td>Purified extract</td>
</tr>
<tr>
<td>Covex</td>
<td>Spain</td>
<td>Spain</td>
<td>Dry bark</td>
<td>Crude extract</td>
</tr>
</tbody>
</table>

Source: GTZ 2001 Prunus Market Study (Europe)
## Composition of Piles from *Prunus africana* Bark

<table>
<thead>
<tr>
<th>Name of Product</th>
<th>Composition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prostatonin</td>
<td>Each capsule : 25mg extract of <em>Prunus africana</em> + 300mg of Radix Urticae</td>
</tr>
<tr>
<td>Pygeum 30 softgels</td>
<td>1 softgel contains 12-13% of Phytostérols ; Prunus + Saw Pametto</td>
</tr>
<tr>
<td>Tadenan</td>
<td>Each capsule contains : 50mg of bark extract</td>
</tr>
<tr>
<td>Acubiron</td>
<td>1 capsule : 30mg extract of <em>Prunus africana</em></td>
</tr>
<tr>
<td>Bidrocar</td>
<td>1 capsule : 25mg extract of <em>Prunus africana</em></td>
</tr>
<tr>
<td>Neo-Urgenin</td>
<td>1 dragée: 25mg extract of <em>Prunus africana</em> + 100mg + 200mg datte palm extract</td>
</tr>
<tr>
<td>Pronitol</td>
<td>1 capsule: 25mg extract of <em>Prunus africana</em></td>
</tr>
<tr>
<td>Prosturol</td>
<td>1 capsule : 25mg extract of <em>Prunus africana</em></td>
</tr>
<tr>
<td>Tebenate compuesto</td>
<td><em>Prunus africana</em> + glycine + glutamic acid</td>
</tr>
<tr>
<td>Tuzanil</td>
<td>1 capsule : 25mg extract of <em>Prunus africana</em> bark</td>
</tr>
</tbody>
</table>
Summary of products of Prunus origin in selected countries

**Germany**: Total absence of production of final products and extract

**Austria**: Presence of 2 final products not manufactured in the country, but in France and Switzerland. Prunus bark market does not exist in Austria

**Switzerland**: Pharmaton company trades on Prostatotonin®

**France**: With an old Prunus based specialty-Tadenan and the extraction unit at Synkem, represents the largest market in Europe

**Italy**: Indena conferred its trade rights to Synthélabo France)

**Spain**: 8 final products are traded.
SUMMARY ON PRUNUS TRADE

According to CITES sources, *Prunus africana* is found in 21 African countries, of which 5 (Equatorial Guinea, Cameroon, Kenya, Madagascar, and Congo) are involved in trade.

*Prunus africana* bark extract contains an active ingredient used for the treatment of benign hypertrophy of the prostate gland, a disease common and increasingly observed among ageing men.

The bulk of semi-finished products (Extract) is produced in Europe and the final product is traded in Europe as medicine and as food supplement mostly in the USA.

The sales of Prunus-based products reached its peak in 1997, while stagnation of the market is observed.

In 2000, about 1400 tons of dry bark (2800 tones of fresh bark) were transformed in European pharmaceutical factories, on an average extraction rate of 0.5%.

7,000 kg of bark extract were traded generating a value of about 2,45 billion FCFA.
2 companies Groupe Fournier-France and Indéna-Italy transform 86% of bark extract in the world market, most of it used in own factories for manufacture of drugs, only a small portion circulates in free markets.

Free market of dry bark accessible to 5 exporting nations is estimated at 325 tonnes, clear indication of a very closed and restrictive market.

Taking into consideration the necessary investment to set up an extraction plant, the low extraction rate, the quality exigencies of the market, the volume of trade, it is unrealistic to imagine setting up of an extraction unit only for Prunus in Cameroon.

Current authorised trade volume from Cameroon stands at 350 tonnes of dry bark per annum Cameroon.

Current farm/forest gate prices of dry bark stand at 700 FCFA/Kg (Euro 1.07; -)
Thanks for Your Kind Attention