

MARKETING OF TRADITIONAL NWFPS

Are insects valuable? Synopsis of mopane worms

Mopane worms are the larvae of the moth *Imbrasia belina* and are widely consumed in rural areas of southern Africa for their nutrition and income-generation opportunities. They are mostly consumed in the rural areas of countries such as Botswana and Zimbabwe and the Limpopo and Mpumalanga Provinces of South Africa. Mopane worms are good nutritional supplements for the majority of people in rural areas, since they provide approximately 65 percent protein, 51 percent fats and amino acids. The availability of mopane worms creates seasonal employment for rural women. Sixty-five percent of rural dwellers in the southern Africa mopane belt collect mopane worms for subsistence use, while 35 percent sell them at the nearby urban markets.

Women and children are mainly involved in collection and sale of the worms but, in recent years, men too have been engaged, attracted by income-earning opportunities. Mopane worms are sold along the streets in urban areas and in areas where elderly people receive their pensions. Trading of mopane worms is currently a commercial business with good economic returns. During a good year, dried mopane worms sold by an urban vendor at Thohoyandou, South Africa, can make a turnover of about US\$2 975. Mopane worms are currently processed and traded locally and internationally as snacks and canned products. The commercial trade of mopane worms in Botswana, Zimbabwe and the Limpopo and Mpumalanga Provinces of South Africa contributes multimillion rands to the gross domestic product (GDP). This shows the lucrative trade for mopane worms. The price for selling the worms, however, is determined by the number of buyers, abundance of the worms and distance from the market. An abundant supply of mopane worms results in a drop in price because of oversupply in the market, a situation that is reversed when the supply is no longer abundant. Distance from the market increases price since transport costs need to be recovered. Consequently, all these factors determine the income that can be generated from selling mopane worms.

The outbreak of mopane worms occurs twice a year, normally from December to

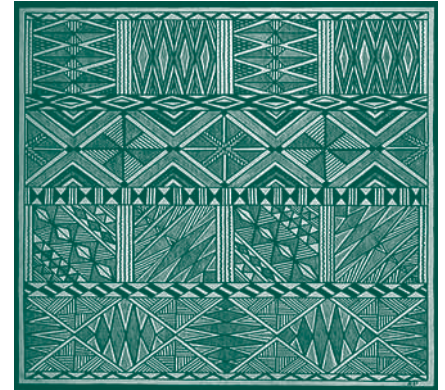
January and from April to May. Outbreak and abundance vary annually, as determined by the availability of rainfall and the presence of host-tree leaves (*Colophospermum mopane*). Low rainfall and scarcity of host-tree leaves limit the abundance of the worms, since there is a shortage of fresh mopane leaves on which they feed. Despite the value of mopane worms, primarily for livelihoods, their abundance has been limited in recent years. The causes of this low supply are uncertain, but could relate to unfavourable conditions resulting from climate change (low rainfall and high temperatures) and the destruction of the mopane worms' host tree. Absence of rules that regulate the harvesting of mopane worms has also increased competition for harvesting between the local people and outsiders, and this also affects their life cycle. All these factors hamper the wealth and nutritional supplement that mopane worms can provide, and increase the vulnerability of rural people to malnutrition. (Contributed by: Rudzani Makhado, Assistant Director, Forestry Research, Forestry Policy and Strategy, Department of Water Affairs and Forestry, P/Bag x 313, Pretoria 0001, South Africa; e-mail: makhado2002@yahoo.com and Martin Potgieter, Department of Biodiversity, University of Limpopo, P/Bag x 1106, Sovenga, South Africa; e-mail: martinp@ul.ac.za)

Bark cloth makes comeback on international fashion scene

Kampala. Bark cloth, a fabric historically used by the Buganda in central Uganda to wrap their dead before burial, is making a comeback in the form of trendy crafts, clothing and household goods. The cloth, made from *Ficus natalensis* trees, was supplanted by the introduction of cotton by Arab caravan traders in the nineteenth century. Now bark cloth crafts such as table mats, bedcovers, jackets, purses and wide-brimmed hats are finding their way on to the international market.

Bark cloth is exported to Germany, Japan, Australia, the United States of America and Canada where significant populations of Ugandans live. There is also huge demand from neighbouring Kenya. Kenyan traders blend the cloth and export the products to Europe and the United States.

The Mwangwe Rural Development Association works to raise consciousness



among artisans to improve the quality of bark cloth products. Vincent Musubire, chairperson of the association, said that "when we look at it critically, bark cloth has a big future but not in the traditional sense of burying people. It has value and can generate income, which is where I am putting the emphasis." He said that prospects for the bark cloth market were promising, especially internationally. "We want to ensure that the crafts from bark cloth produced by women and men meet the quality requirements of the local and international craft market. That is why we are not leaving it to the local community to produce. I'm linking up with skilled young graduates of industrial art and design to work with local craftspeople to produce quality products", he said.

Nuwa Wamala Nyanzi, an artist and owner of a crafts business in Kampala, confirmed that the demand for bark cloth among tourists is high but that it is not being marketed widely enough at international craft expos. Nyanzi also added that bark cloth production is suffering because there are few craftspeople who have the skill to make quality bark cloth. Traditionally, craftspeople of the Ngonde clan have manufactured bark cloth for the Baganda royal family and the rest of the community; however, many have died without passing on their skill.

Bark cloth is recognized as part of the world's collective heritage by the United Nations Educational, Scientific and Cultural Organization (UNESCO). Head of the Uganda National Commission for UNESCO, Augustine Omare Okurut, said that "research is being conducted on the making of bark cloth, how to preserve it and how it can be exploited for the benefit of the local and international community". (Source: Inter Press Service [Uganda], 12 February 2009.)

Chambira palm: baskets bring a new way of life to Peruvians

San Antonio de Pintuyacu, Peru. Women in this remote Amazon village can weave fibres from the branch of the chambira palm tree into practically anything they need – fishing nets, hammocks, purses, skirts and dental floss. But for the last year they have put their hopes in baskets, weaving hundreds to build up an inventory for export to the United States of America. Their first international buyers are the San Diego Natural History Museum and San Diego Zoo, and they plan to sell to other museums and home décor purveyors.

The enterprise is one of many ventures in the Amazon aimed at “productive conservation”, which advocates say will save the rain forest by transforming it into a renewable economic resource for local people.

The government of Loreto, Peru’s densely forested and least populous region, organized the basket project, which is financed by grants from two non-profit groups, Nature & Culture International and the Moore Foundation.

The changes in Loreto may correspond to a broader shift in Peru’s attitude towards conservation. Last spring, motivated by the signing of a free trade agreement with the United States of America, the country set up an environment ministry, which has already started to focus on deforestation.

The basket project is the brainchild of Noam Shany, an Israeli agronomist and entrepreneur. A bird-watching trip in 2005 led him to a remote village on the Tahuayo River, an Amazon tributary. There, he said, he noticed striking local baskets for sale in a tourist lodge.

Mr Shany, who had previously sold artificial plants to Walmart and cacti to nurseries in California and Australia, decided to put his retail experience to an environmental use.

In 2006, he helped found PROCREL, a biodiversity programme that has worked with the regional government to establish three vast protected reserves. The basket programme is one of several conservation initiatives intended to help indigenous peoples benefit from the conservation efforts.

Pitching Peruvian handicrafts to retailers in the United States was easy. “These baskets represent so much more than simply a basket,” said Nancy Stevens, manager of retail and wholesale operations for the San Diego Natural History Museum.

Pitching an international enterprise to the villagers was almost as easy. Mr Shany turned a somewhat haphazard local craft – women making a few baskets, selling them in a local shop, and then making a few more – into something more like mass production, with higher returns to the producers.

Artisans get US\$10–12 for each basket, which sells for \$40 in the United States. About a third of that goes into shipping and distribution, and the rest is retailer profit, meaning that the company distributing the baskets gets a little more per unit than each maker. Mr Shany and PROCREL receive nothing.

The artisans’ cut may not seem substantial, Mr Shany said, but it is more than double previous monthly earnings. Two years ago, households in this region earned as little as \$30 a month selling fish and palm frond roofing at city markets, he said. Today, experienced weavers can earn up to \$100 a month. [Source: *The New York Times* [United States of America], 19 January 2009.]

Ecoenterprises and *Terminalia ferdinandiana*: “best laid plans” and Australian policy lessons

In a recent article in *Economic Botany*, A.B. Cunningham *et al.* review practical policy lessons from trade in a dietary supplement (or nutraceutical) processed from *Terminalia ferdinandiana* (Combretaceae), which contains extremely high levels of natural ascorbic acid (vitamin C). Most production is from wild harvesting by Aboriginal people, who get US\$14/kg for picked, sorted fruit. However, the main Australian company involved is struggling to get the 12 tonnes/year it requires, and could market much more. Although Aboriginal people ideally should benefit economically from the harvest of *T. ferdinandiana*, there are major challenges to this objective, including Australia’s high labour costs compared with Asia, Africa and Latin America where *T. ferdinandiana* can be grown. In addition, although Australia is a signatory to and plays a leading role in the international Convention on Biodiversity (CBD), this has meant little in practice so far.

“Cultural branding” and certification of organic, wild harvested *T. ferdinandiana* fruit collected by Aboriginal people working in partnership with commercial companies offer a possibility for Aboriginal people to continue to benefit from wild harvest or

T. ferdinandiana

fruits have a long history of Aboriginal dietary use. Commercial attention was drawn to the species as a source of vitamin C over 20 years ago. But, unlike the more established markets for carvings, didgeridoos, sandalwood oil and bush tucker, which have been in operation since at least the 1970s, commercial harvesting of *T. ferdinandiana* only started in 1996. However, the fact that the final product produced from *T. ferdinandiana* – naturally occurring ascorbic acid – has been commercially available for a long time, enables *T. ferdinandiana* products to link into an existing niche market.



enrichment plantings. However, even the establishment of commercial horticultural production within Australia faces several challenges.

For Australia to maintain and develop the international market, future development of this bush food must include: (i) implementation of existing international and national policies on the protection of genetic resources; (ii) formation of a producer association to increase production efficiencies; (iii) functioning partnerships between Aboriginal producers and commercial partners that guarantee and expand reliable supply and develop cultural branding and certification as marketing tools; and (iv) scientific research into improving *T. ferdinandiana* fruit yields and production methods, based on improved resource management and efficient processing methods. [Source: *Economic Botany*, 63(1), 2009.]

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First FSC-labelled gin from Belgium

The first Forest Stewardship Council (FSC)-labelled gin was launched on the Belgium market in December 2008. Made from the green pine cones of *Pinus sylvestris*, a common tree in the Flemish region, the launch of this gin also marks the first FSC-certified NTFP originating from Belgium.

Known as *dennenknopje*, "little pine cone" in Dutch, the gin is made from cones that are collected from the FSC-certified Domeinbos Pijnven forest. Owned by the Flemish Government, it is managed as part of a larger FSC group that has been certified since 2006. Certification under FSC's Principles and Criteria for responsible forest management ensures that the natural forest complexity is maintained and social issues are considered, while securing long-term supplies of forest products.

Distilleerderij Leukenheide is the family-owned company responsible for producing the gin. Founded in 1833, it is the oldest traditional gin distillery in the region. The company achieved the FSC chain of custody certification in May 2008, facilitating completion of the supply chain from Domeinbos Pijnven forest by processing the gin and labelling the bottle with the FSC label.

The eye-catching FSC-labelled gin promotes FSC in the country and has strengthened local identity for this relatively forest-rich region. It also demonstrates that responsible management of forests can bring new and interesting opportunities, not only for recreational purposes, but also within the economic perspective of responsible forest product harvesting. (Source: Forest Stewardship Council, 19 January 2009.)

Consumers' contribution towards biodiversity – the cork case study

Cork oak forests extend over an area of almost 2.2 million ha, concentrated mainly in the Mediterranean region, in southern Europe and North Africa.

Cork oak forests are an effective barrier against the desertification affecting a large part of the Mediterranean region, playing a key role in ecological processes, such as water retention, soil conservation and carbon storage (carbon sink of over 14 million tonnes annually) – environmental services with a non-market value (externalities).

In the undergrowth of cork oak forests, and supported by its features of multiple-use low-intensity agroforestry systems – a

unique system shaped by human beings – aromatic and medicinal plants, mushrooms, natural grazing with extensive livestock farming and game complete this fantastic ecosystem and provide rural populations with work and sources of income.

These landscapes also support one of the highest levels of biodiversity among forest habitats (they are listed in the EC Habitats Directive – 92/43/EEC), reaching levels of 60–100 flowering plant species per 0.1 ha, as well as species-rich grasslands with up to 135 species per 0.1 ha. They also provide habitat requirements for a large number of endangered species (Iberian lynx, Iberian imperial eagle, the black vulture, the black stork, etc.), and large numbers of wintering birds from northern Europe, together with a rich diversity of fauna.

The sustainable cork use for wine bottle stoppers is the strongest economic activity. The cork oak tree has a lifespan of around 170–200 years, during which time it will be stripped about 15–18 times (every nine years). After the harvest, the bark renews itself until it is ready to be harvested again; none of the trees are cut.

Through cork, the European Union (EU) is also the world leader in the wine stopper sector – perhaps one of the few cases in which a natural product persistently holds on to its leadership of the market. With a total cork market value of about €1.5 billion, with EU exports worth €0.47 billion, cork stoppers also account for 70 percent of the international wine stopper trade.

Besides their superior quality as closures, cork stoppers have numerous advantages (environmental and social values) that clearly distinguish them from alternative wine stoppers, specifically plastic stoppers and screw tops (aluminium).

Cork for bottle stoppers accounts for almost 70 percent of the total value of the cork market, ensuring a vital role in maintaining the economic value of cork and the low-intensity use of cork oak forests.

There has been a significant decrease in the cork stopper market because of the increase in the market share of alternative wine stoppers (plastic stoppers and screw tops), supported by a huge marketing campaign and by what some retailers are choosing for the wine consumer. This change in the global closure market is reducing the economic value of cork forests, which represents a major threat to the sustainability of these important landscapes.

Even though wine drinkers continue overwhelmingly to prefer cork wine closures

to the alternatives, they do not have the information to enable them to make sustainable choices that take into consideration wider society concerns, because of the absence of labelling about the type of stoppers used in the wine.

The cork oak forests and cork case study is one of the best examples of how a consumer's choice, through an informed purchasing decision, can contribute to supporting high biodiversity levels and sustainable economic activities. (Contributed by: Nuno Mendes Calado (Secretário-Geral), UNAC-União da Floresta Mediterrânica, Av. Colégio Militar, Lote 1786, 1549-012 Lisbon, Portugal. Fax: +351 21 710 00 37; e-mail: ncalado@unac.pt www.unac.pt)

Honey and wax: a sticky challenge

The Blue Mountains or Nilgiris region of India are considered one of the most ecologically fragile areas in the region. The Nilgiris hills have varied flora, ranging from scrub and dry deciduous to moist evergreen and montane or shola forests. The Nilgiris total land area of 2 749 km² has long faced threats from encroachment and illegal felling of timber; its greatest threat now is the expanding tea and coffee plantations, which cover about 50 percent of the entire cultivated area. Thus, protecting what is left of the forest is crucial to conserving its flora and fauna.

The new system of economics and land use has significantly affected the traditions and culture of the Adivasis, the collective term used to describe the indigenous peoples of India. Numbering about 30 000, the Adivasis of the Nilgiris are known for living in harmony with nature, as seen in their daily lives and survival strategies.

Honey gathering is a traditional activity with a long history in the Nilgiris. For the Adivasis living in the region, marketing support from the Keystone Foundation, using fair-trade practices, was crucial in finding local markets for this traditional product, increasing their incomes and



protecting biodiversity. In 1995, this NGO established its base in the Nilgiris after conducting a survey of honey gatherers and beekeepers in the state of Tamil Nadu. The organization works in the field of environment and development, and the initiative in the Nilgiris was an attempt to harmonize the needs of ecology with the demands of the local economy.

Traditional beliefs, customs and superstitions guide the honey-gathering activity. When collecting from the Idigh cliffs, the Adivasis use forest vines as ladders; collecting honey from trees is easier, since they simply climb up the trees. In both methods, smokers made of fresh leaves and dry twigs are used to flush out the bees. The gatherers use their spears to collect the honeycombs, which are then placed in bamboo baskets and carried to the village.

On average, one honeycomb yields between 8 and 15 kg of honey. During the peak season, which lasts about two months, a group of honey gatherers can collect up to 500 kg of honey. In 1994, honey could be sold to traders for Rs18–30 (around US\$0.45–0.75) per kg in bulk; if bottled, it could be sold for Rs40 (\$1) per kg. Thus, a gatherer's average income would be about Rs3 000 (approximately \$75) during the honey season. In 2008, the price had increased to Rs80 (\$2) per kg but the level of compensation is still quite low, given the amount of effort and skill involved in honey gathering.

To address this issue, Keystone initiated training for a number of honey gatherers in the Kotagiri district. The training focused on both indigenous knowledge and modern/scientific aspects of honey collection. After the training, the honey extracted by the gatherers had a better quality and a longer shelf-life. Keystone started a processing and marketing unit as well, where Adivasis could sell their produce, such as honey and beeswax. In addition, Keystone incorporated fair-trade principles in procuring honey, which increased the confidence of the Adivasis.

Soon, more honey started arriving and more people were trained. News about the "honey unit" spread by word of mouth in the community. The unit conducts regular training for newcomers and now sells over eight tonnes of honey and beeswax every year in the region. It also has over 2 000 Adivasi honey gatherers in its network.

Finding local markets. After experimenting and developing the

appropriate technology for processing, Keystone began bottling honey and forming beeswax into hand-rolled candles and comb foundation sheets. Initially, it was difficult to find a market for these products. Local people in the towns of Nilgiris had no knowledge about the Adivasis or their special niche in collecting forest products. Keystone increased its efforts to inform consumers about the honey and the people behind it. Because of the high-quality products and regular supply, local people from the towns started buying the goods and the clientele steadily increased. The products eventually infiltrated the tourist market and now more than 60 percent of goods are sold in small towns in the Nilgiris.

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Custom-made Crafts Centre: creating new markets and appropriate strategies for communities

A non-traditional approach to the development of traditional crafts has allowed a unique marketing programme in the Philippines to bring the benefits of well-planned marketing strategies to indigenous peoples' communities.

Hinabol is a colourful loom-woven cloth made of abaca fibre produced in Bukidnon Province, in the southern Philippines. It is one of the handcrafted traditions whose cultural value is recognized through the alternative marketing centre, Custom-made Crafts Centre (CMCC), which offers a collection of products from indigenous artisans. Their materials are made from non-timber forest resources and the designs are drawn from timeless traditions that have been fashioned into functional items for home or personal use.

A livelihood programme of the Non-Timber Forest Products – Task Force Philippines, CMCC is a marketing initiative that provides a stable source of income and better returns for artisans, as well as a venue for expressing traditional art forms. It balances the needs of both consumers and producers by "customizing" the crafts to the tastes of the modern market while respecting the artisans' traditions and lifestyles.



Fourteen people's organizations and NGOs participate in the Centre's programmes in manufacturing and marketing community handicrafts. The operations of CMCC also support small cottage industries in Manila and nearby provinces, as well as urban poor enterprises. Moreover, several craft designers and experts contribute their time and effort in coming up with unique and high-quality products for CMCC.

The Centre supports ten cultural communities, each with an array of unique handicraft products – basketry, hand weaving, bead work and embroidery. For these communities, handicraft-making is a heightened expression of their cultures and traditions. At the same time, it is a traditional economic activity as well, with handicrafts being bartered for household needs. When the market economy became increasingly influential in their communities, the economic value of crafts gained more importance and, eventually, handicraft-making metamorphosed into an important source of livelihood. The indigenous artisans learned that they could earn cash by selling their handicrafts. Treating the crafts as novelty products, tourists bought one or two as souvenirs, thus starting the handicrafts trade.

However, the market economy exposed the indigenous communities to risks. While they profited from selling handicrafts, they also learned that the market could be fickle and unstable. They have to scout constantly for regular buyers. Without them, cash flows tend to be irregular.

CMCC faced similar problems. Gaining access to appropriate and new markets, and meeting market requirements were constant worries. Hence, its livelihood programme was designed to weave varied but interrelated socio-economic, cultural and environmental considerations in its production and marketing planning. *(Source: From seeds to beads. Tales, tips and tools for building a community-based NTFP*

enterprise. Non-Timber Forest Products Exchange Programme for South and Southeast Asia. ISBN 978-971-93388-1-9.)

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International logos for local products in Nepal

Kathmandu. Nepali lokta paper and Nepali pashmina, together with their own brands, are set to rule the international market. Nepali lokta paper is being promoted with the brand "Nepalokta, the new spirit in paper", while Nepali pashmina has developed its brand name as "Chyangra pashmina".

Nepali lokta paper has already had its brand registered with the EU and also received approval to be used in government correspondence work. The Nepal Pashmina Industries Association (NPIA) has been trying to register its brand logo.

"After the cabinet approval, now Nepali lokta paper will be used in official documenting work. The decision has brought Nepali handmade paper back to life," said Milan Dev Bhattarai, President of Nepal Handmade Paper Association (HANDPASS) during the Nepalokta brand promotion programme today.

Use of Nepali handmade paper in the past was compulsory in government legal correspondence, but was suddenly phased out from government offices. The property ownership certificates issued by the Ministry of Land Reform and the certificate of citizenship and passport issued by the Home Ministry used to be made from handmade paper but, after 1998, the Government started using imported paper for these purposes.

According to Bhattarai, in 2008 the total export of Nepali lokta paper was more than Rs300 million directly and about Rs200 million indirectly through tourists arriving in Nepal. [Source: *The Himalayan Times*, 13 April 2009.]

Brazilian brokering company to market Amazonian NWFP oils

Unit Brazil, a brokering company headquartered in São Paulo, has just been

hired as the export agent to market Amazonian oils and butters produced by Engefar, a cosmetics raw materials supplier located in the state of Pará.

Engefar's products are oils and butters extracted from exotic fruit pulps and seeds of the rain forest, such as buriti (*Mauritia flexuosa*), açai (*Euterpe oleracea*), copaiba (*Copaifera* spp.), muru-muru (*Astrocaryum murumuru*) and andiroba (*Carapa guianensis*). These raw materials have functional elements that are desirable to upgrade formulations. For example, açai oil, extracted from the açai berry pulp, can add antioxidants to moisturizing creams and shampoos, while buriti oil is widely used as a solar filter for skin protection.

According to John Laurino, Unit's Chief Executive Officer: "We are amazed to see such fast positive feedback from major cosmetics ingredients distributors all over the world; it is like we are offering them a golden raw material, capable to upgrade their product's profile." He believes that the Amazonian oils he just added to his portfolio may represent a US\$20 million/year business in a couple of years. [Source: PR.com, 13 May 2009.]

Guatemalan maya nut producers participate in the Terra Madre event in Italy

The Equilibrium Fund is an NGO with a mission to alleviate poverty, malnutrition and deforestation by teaching rural and indigenous women about the nutrition, uses and processing of maya nut (*Brosimum alicastrum*). In October 2008, two members of the Cooperative for Rural Women's Development (CODEMUR), a partner organization of the Equilibrium Fund, were invited to share maya nut products at the world's largest food fair, Terra Madre, in Turin, Italy.

There they had the opportunity to mingle and exchange ideas with over 1 500 small producers from 142 countries. In conjunction with Terra Madre and the Italian Slow Food Foundation, CODEMUR has decided to form a Maya Nut Presidium, dedicated to the preservation of the maya nut as a traditional food for Central America.

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Marketing and export of yarina (*Phytalephas macrocarpa*) in Loreto, Peru

Yarina, known locally as tagua or vegetable ivory, is a native species used by Amazonian communities: the leaves for roofing houses, the fruits for food and the seeds for the manufacture of organic buttons.

The purchase price of the fruit in the community before being transferred to the manufacturing plant is US\$0.17/kg without the shell and \$0.23/kg shelled. One kilogram is equivalent to 20–25 seeds, depending on the size of the fruit. The trade of the leaves is carried out locally in the communities and can sometimes be found at Iquitos city.

PROCESSING THE SEEDS

The local producers gather the seeds in the field, either in clusters or the ripe fruit that has fallen to the ground, removing the seeds and at the same time removing the skin and the mesocarp. Once clean, the seeds are stored in polypropylene bags of 50 kg to be transported to artisan communities for drying, where the primary processing starts – drying of the shelled seeds and their classification by size, quality and condition.

The seeds are placed on black plastic to dry in the sun for 20–30 days (in some cases, even more), taking care that they do not get wet in the rain. After this period, the seeds have hardened enough to be classified and stored according to size, with any impurities or seeds in poor condition having been removed. The dried seeds are then transported to the purchaser's plant. These companies fulfil the role of transformers-exporters and are responsible for the secondary processing of the seeds, which is the transformation into semi-finished products for buttons and handicrafts.

Some of the processors of yarina, such as Amazon Ivory EIRL, which is responsible for the development of different types of handicrafts, and Marfil del Amazonas SAC, which is responsible for the production of discs for buttons, have driven the commercial development of this resource in the Loreto region, e.g. the basin of the river Yanayacu Pucate at the Reserva Nacional Pacaya Samiria.

The main markets for vegetable ivory and its derivatives are Italy, the United States of America, Germany, France, Chile, the United Kingdom, Costa Rica, the Netherlands, Spain and Belgium, with great export demand in 2005 in Costa Rica (US\$48 723), Spain (\$11 863) and Germany (\$8 458). At present, it is also being exported to the Asian market and has become an activity that contributes to the effective preservation of the Amazon environment. (Contributed by: Joe Sixto Saldaña Rojas, Red Ambiental Loretana (RAL), Av. Guardia Republicana (ex-Guayabamaba) N° 163 - a 100 metros del C.O.A, Loreto, Peru. E-mail: redambientalloretoana@yahoo.com or jsaldanar@gmail.com; www.redambientalloretoana.org)

BERRIES

Mistletoe infection of amla, the value of local management practices

Amla (*Phyllanthus emblica* and *P. indofischeri*) is an NTFP of significant livelihood importance in southern India and wider economic importance throughout the rest of the country. A three-year study completed last year at the Biligiri Rangaswamy Temple (BRT) wildlife sanctuary in Karnataka investigated the scale of mistletoe infection, its ecological and economic implications, and the potential of alternative management approaches to offer a solution to this threat to sustainable harvesting (see *Non-Wood News* 14/07).

Forest surveys, mistletoe removal experiments and mistletoe seed deposition surveys were employed to assess the prevalence of mistletoe infection in the amla population, characteristics of infection in relation to resource value and the appropriateness of local versus institutional management approaches to the problem. The findings of this study suggest that not only is

AMLA, THE INDIAN GOOSEBERRY



Amla is an important medicinal plant species, its fruit being used extensively in the traditional Indian medicine system, Ayurveda. Amla berries are also used for making pickles, jams and cosmetics and are an important food resource for a number of ungulate species. Trade in the south of India is largely from wild extraction but several cultivars are grown in commercial plantations in Uttar Pradesh, Maharashtra, Gujarat, Rajasthan and Andhra Pradesh, and also in some areas of Tamil Nadu and Karnataka. The economic value of amla fruits (including processed products) has been estimated at between Rs200 and 250 million (US\$5–6.25 million) but demand appears to be growing and market potential is considered to be much higher.

mistletoe infection widespread in the BRT sanctuary, affecting over half of the amla population, but that it is particularly severe in those trees of greatest reproductive value. Infection characteristics and resource values differ between the two *Phyllanthus* species, the species of greatest value (*P. emblica*) being that most seriously affected.

Institutional perspectives on the management of these two species conflict with local practices. The Karnataka Forest Department advocates removal of mistletoes by hand and has promoted this strategy to harvesters. In contrast, harvesters consider removal by hand to be both impractical and ineffective and therefore prefer to chop off the infected branches in order to remove mistletoes, a practice most commonly implemented during the annual harvest. This cutting of branches by amla collectors was previously considered destructive but in

fact has been shown to have management benefits. These benefits include increased productivity through resprouting of amla trees and subsequently higher levels of fruit production, as well as reduced risk of further mistletoe infection. However, neither mistletoe removal by hand nor branch cutting appears to offer a viable control strategy in isolation. A multifarious strategy, including new approaches to management, is probably needed to safeguard the role of this resource in local livelihoods and future work will aim at developing such a strategy as part of ongoing participatory management undertaken by the Ashoka Trust for Research in Ecology and Environment (ATREE).

This study, conducted by scientists from ETH Zürich and Imperial College London, in association with ATREE has shown that local harvesting practices may not be as damaging as first suspected and indeed may have significant management benefits. Local NTFP harvesting and management practices should be evaluated objectively without preconceptions about their efficacy. The recognition and acceptance of their benefits (as well as deficiencies) within scientifically driven management and policy frameworks may have significant value. (Contributed by: Lucy Rist, ETH Zürich, Institute for Terrestrial Ecosystems, Professorship Ecosystem Management, Universitaetstrasse 22, Zürich 8092, Switzerland. E-mail: lucy.rist@env.ethz.ch; <http://www.ecology.ethz.ch/>)

Summer berries in British Columbia, Canada

Wild berries abound in the summer. Berry quality can vary greatly depending on habitat. The berries can be either sold fresh or made into a variety of value-added products, such as preserves, baked goods and even wine.

With the exception of blueberries and huckleberries, most wild berries do not currently have a large commercial market (i.e. it may be difficult to find a buyer for the berries). Therefore, it is not easy to estimate prices that might be obtained for the various berries. The best option for fresh berries is to sell directly to a restaurant, grocery store or at a farmers' market. This will also increase the price paid per litre, especially if the berries are of high quality and clean.

There are many species in the *Rubus* genus (the raspberry clan), all of which

have edible berries. It is interesting to note that the new shoots (branches) of most *Rubus* species can be eaten in the spring when they are still soft and bendable (the skin is peeled and they are eaten raw or cooked). The shoots do not store well and have therefore not yet become a popular commercial product. All the species of *Rubus* have leaves and twigs that make a

good tea when dried, and have been used by many Aboriginal peoples for a variety of health ailments. Leaves and twigs can be harvested at any time but are best when harvested in late autumn.

Processing berries can add value to the product. Wild berry jam generally sells for around US\$6 per 250 ml jar (with about four jars of jam from one litre of berries,

plus the cost of the jar, label and sugar). (Source: Wendy Cocksedge and Michelle Schroeder (eds). 2007. *A Harvester's Handbook. A guide to commercial non-timber forest products in British Columbia*. Victoria, British Columbia, Canada, Royal Roads University, Centre for Non-Timber Resources.)

SALMONBERRY (*RUBUS SPECTABILIS*)

Salmonberries grow in thickets, with erect branches up to 13 ft (4 m) tall, although averaging about 5 ft (1.5 m). They are very common all along coastal British Columbia, from low up to subalpine elevations and thrive in wet areas – beside streams, lake edges, depressed areas within forests, and also on disturbed sites.

Salmonberries have a high moisture content, so do not store as well as other berries when fresh (they become mushy very quickly). Although they are often considered more of a “weed” than a delicacy, they are actually very tasty and have good commercial potential. They make a sweet jam with a distinctively beautiful colour.

HUCKLEBERRY AND WILD BLUEBERRY (*VACCINIUM* SPP.)

There are a variety of huckleberry and blueberry species that grow in the Pacific Northwest, including Alaska blueberry (*Vaccinium alaskaense*), red huckleberry (*V. parvifolium*), oval-leaved blueberry (*V. ovalifolium*) and evergreen huckleberry (*V. ovatum*) at lower elevations, and black huckleberry (*V. membranaceum*) and cascade huckleberry (*V. deliciosum*) at higher elevations. All are edible and delicious.

Huckleberries and blueberries are very common and appear along the whole coastal area of British Columbia. Red huckleberry and evergreen huckleberry occur at low elevations, with evergreen huckleberry often found close to the ocean. Alaskan blueberry and oval-leaved blueberry occur from low to subalpine elevations, and black huckleberry and cascade huckleberry are found at middle to high (alpine) elevations.

Although huckleberry and blueberry bushes will grow in the shade, they require light to produce berries. Good berry bushes are found most often in clear-cuts and young forests, mature forests where there are gaps in the canopy, along forest edges, and along streams and lakes. Berries found in partial shade tend to be juicier and sweeter than those produced on plants growing in direct sunlight (such as in a clear-cut).

Berries are used either fresh or as a value-added product. Huckleberry preserves are very popular. Picking the berries individually by hand results in the least amount of damage to the plant, although this method can be quite slow. A small berry comb can be dragged through the bush, pulling off the berries. Berry combs can be purchased, or a wide-toothed hair comb or pick can simply be used. Combs should be used carefully to avoid excessive damage to the foliage. Using a comb also requires sorting the berries once picked to remove leaves and imperfect berries. A standard method of sorting is to roll the berries down a wet board or rough blanket – the leaves will stick to the board or become caught in the blanket while the berries roll to the bottom.

To maintain quality for both the *Rubus spectabilis* and *Vaccinium* spp. mentioned above, the berries should be cooled (recommended to about 5 °C) as soon as possible after picking. Do not wash the berries prior to storing them in a fridge or cooler, as this will decrease their storage life. Berries should be taken to a buyer within a day or two after picking, unless they are frozen. When transporting, take care to use wide shallow containers or baskets to avoid crushing. If you plan on making preserves, freeze the berries first as this helps break the cell walls of the berry.



Thousands of Thai berry pickers invited to Finland

Finnish berry farms and suppliers invite thousands of seasonal workers from Thailand to Finland to pick wild berries next summer.

According to First Secretary Vesa Häkkinen from the Unit for Passports and Visas at the Ministry for Foreign Affairs, a total of 3 500 prequalification assessments for visas to Finland have so far been submitted to the Finnish representation in Bangkok.

Häkkinen adds that the problem evidently is that the further away the berry pickers, the higher the related expenses. A flight ticket alone costs more than a berry picker's annual income would be in Thailand. In addition, the picker has to pay for a visa and possibly even a fee to an agent in Thailand. In Finland, he or she has to pay for accommodation, transport, petrol and food.

“The process involves unscrupulous collection of money at nearly every stage. I regard it as a kind of extortion. It is not trafficking in human beings but it is something similar. Juridically, everybody comes here at their own risk, like self-financing entrepreneurs. Nevertheless, it is a major ethical issue,” said Häkkinen.

A total of some 12 000 foreign berry pickers arrive in Finland every year. Most of them come from the neighbouring areas of the Russian Federation and the Baltic states. The Ministry for Foreign Affairs recommends that berry farms should

increasingly hire pickers who come from neighbouring countries. Then it would be easier to react to the situation if prospects for the berry crop appear to be worse than usual.

"When berry pickers come to Finland from far-off countries with high hopes of earning money and the berry-picking season turns out to be worse than expected, they have no money for a return trip," Häkkinen adds.

Most seasonal Thai workers come to Finland in order to pick wild berries. In practice, berry farms and berry-processing companies invite berry pickers to Finland and then buy the berries they have picked. The income may be low if the berry crop remains poor but, if the season is good, many can earn a year's income from picking wild blueberries and lingonberries and selling them to berry buyers.

Berry pickers from Thailand are preferred as they are in a league of their own, says Export Manager Ben Strömsten from Riitan Herkku. "They are diligent pickers and easy team members," he says. (Source: ScandAsia.com, 3 May 2009.)

Berry products showcased

Many new developments in functional food and the nutraceutical industry were shared at the Vitafoods International and Finished Products Expo, running from 5 to 7 May 2009 in Geneva, Switzerland.

Premium Ingredients International will be at the show with its unique product, LingonMax™. Extracted from the lingonberry (*Vaccinium vitis-idaea*), LingonMax is a natural skincare ingredient effectively shown to increase skin moisture, decrease skin spots, reduce wrinkles and decrease sensitivity. (Source: NPI center news, 22 April 2009.)



Antioxidant in berries stops wrinkles

Data are mounting that phytochemicals found in a host of berries can improve health from the inside. Now comes research just presented at the Experimental Biology 2009 meeting held in New Orleans, Louisiana, United States of America, that a specific type of antioxidant phytochemical called ellagic acid holds the promise of enhancing our bodies on the outside, too. In fact, it may hold the key to slowing down or even stopping skin ageing successfully.

Researchers in the laboratory of Dr Young-Hee Kang at Hallym University in the Republic of Korea have found that topical application of ellagic acid markedly prevents the two major causes of wrinkles – the destruction of collagen and inflammation.

Ellagic acid is found in many fruits, vegetables and nuts but it is especially abundant in raspberries, strawberries, cranberries and pomegranates.

Scientists from the University of Louisville and Fox Chase Cancer Center published research recently in the *International Journal of Molecular Science* that strongly suggests ellagic acid can also reduce damage to DNA and, in fact, may help repair faulty DNA. (Source: *Natural News*, 24 April 2009.)

Açaí berry, superfood or superfraud?

Is the açai berry a superfood or a superfraud? For years, the media has been raving about the açai berry and its health benefits, but a recent rash of negative publicity has forced people to ask the question – is açai the real deal?

"The media tends to like juicy stories – either something very positive or something very negative. Of course, the truth usually lies in the middle. This is the case with the açai berry," states Bob Peters, Director of Communications for PowerSupplements.

The açai berry comes from the açai palm trees in the Amazon rain forest. The berry is very high in antioxidants, healthy omega fats, vitamins, minerals and phytonutrients. Because of its impressive nutritional profile, it has been called a superfruit or superfood.

The mention of the açai berry on the Oprah television show in the United States of America set off an avalanche of positive publicity on the berry as a superfruit.

Unfortunately, in 2008 a number of marketing companies decided to create

JUNIPER "BERRIES"

In certain dishes there is no substitute for juniper, with its unique aroma: piney, woody and vaguely peppery. It is especially popular when used with game, but it is also good with pork, beef and duck, and is a standard addition to dishes containing sauerkraut. Contemporary cooks have been more playful with juniper, dancing around its association with gin or abandoning it altogether for new associations that sound promising.

The "berries" are actually the modified cones of the conifer *Juniperus communis*; underripe berries are preferred by gin makers while overripe specimens are gathered for culinary purposes. Green or ripe, the berries have a lot of pinene, the essential oil that gives rosemary its distinctive snap, and they contain some of the same compounds that give citrus fruits their fresh scent. But in riper berries the sharper notes give way to a softer, vegetal aroma. (Source: *The Seattle Times* [United States of America], 17 May 2009.)



fictitious açai berry review sites and açai diet blogs. These açai scam companies would promise "free trials" and guarantee that you would lose "30 pounds in one week". The açai that they sell is of very low quality, was never endorsed by any celebrities and the only weight you lose is in your wallet.

"We have been raising red flags about these açai scam companies for over a year now," states Peters. "However, it is unfair to say that the açai berry is a scam or fraud simply because there are some fraudulent companies selling açai supplements. If consumers do their research and look for the Perfect Açai Consumer Bill of Rights seal, they will be fine." (Source: *TransWorld News*, 8 April 2009.)

"Miracle fruit" turns sour things sweet

The small fruit has the colour of a cranberry, the shape of an almond and tastes like a flavourless gum. But after chewing the fruit and rubbing the pulp against the tongue, the berry, known by



the promising name "miracle fruit" or *Synsepalum dulcificum*, releases a sweetening potency that alters the taste buds. For about 15 to 30 minutes, everything sour is sweet. Lemons lose their zing and taste like candy. Oranges become sickeningly sweet.

Through word of mouth, these miracle fruits have inspired "taste-tripping" parties, where foodies and curious eaters pay US\$10–35 to try the berries, which are native to West Africa.

About five months ago, a hospital in Miami, Florida (United States of America) began studying whether the fruit's sweetening effects could restore the appetite of cancer patients whose chemotherapy treatments have left them with dulled taste buds. Dr Mike Cusnir, a lead researcher on the project and oncologist at Mount Sinai Medical Center, filed for an investigational new drug application, which is required by the US Food and Drug Administration to use an unapproved product in a new patient population. His study seeks 40 cancer patients. If the results show promise of helping cancer patients to maintain a healthy body weight and appetite, there will be further studies, Cusnir said. The process is expected to take several years.

Linda Bartoshuk, a professor at the University of Florida's Center for Smell and Taste, is also working to understand better how the berry works. In the 1970s, she studied the fruit while working for the United States Army and Navy laboratories. Bartoshuk explains that the miracle fruit contains a natural protein, called miraculin, which has sugar molecules that bind to the tongue. When acid enters the mouth, the sugar molecules press into the sweet receptors.

"This new resurgence of interest is fascinating," said Bartoshuk. "It popped on

the scene and people are having fun with it. It motivated us to go back and do research." Bartoshuk said she has not seen any reports of dangers from eating the berries, but warned against premature health benefit claims. [Source: CNN [United States of America], 25 March 2009.]

Guarana beverage

BAWLS is the brainchild of entrepreneur Hoby Buppert, Chief Executive Officer of Hobarama, LLC, who named the beverage for the caffeinated "bounce" the drink packs. Widely distributed, BAWLS is a premium, non-alcoholic, carbonated beverage made from the guarana berry harvested in the Amazonian rain forest.

The caffeine found in BAWLS contains the same amount of caffeine as coffee and nearly three times that of traditional sodas because of a naturally occurring form of the stimulant found in the guarana berry. [Source: BevNET [United States of America], 5 March 2009.]

Maqui superberry

Novelle International, the first company to introduce maqui berry (*Aristotelia chilensis*)-based supplements, has added SuperFruit Energy Powder to its product list. The maqui-based SuperFruit Energy Powder boasts a premier energy blend of rhodiola, rosea, Siberian ginseng, yerba maté and B vitamins. Maqui is the highest antioxidant superfruit in the world delivering a high value of oxygen radical absorbance capacity (ORAC) of almost double the açai berry.

Recently Novelle donated specialized computer equipment to serve Mapuche Indian schools. "The Mapuche Indian families have used the maqui berry as a food supplement and for health care for centuries. Novelle is honoured to support their education and help sustain their land through organic certification and sustainable harvest practices," said Annie Eng, President and Founder of Novelle. [Source: Market Watch [United States of America], 2 March 2009.]

Berry-based natural sweetener "brazzein" to hit the market in 2009

A new sweetener derived from the berry of the West African plant oubli (*Pentadiplandra brazzeana* Baillon) has been successfully synthesized in a form compatible with mass production and the company Natur Research Ingredients

expects to make it commercially available between late 2008 and mid-2009.

Oubli has long been used as a food source by West Africans and was first synthesized into a sugar alternative in 1994 by researchers from the University of Wisconsin at Madison, United States of America.

Because the University of Wisconsin used an artificial process to extract the brazzein sweetener from oubli berries, it was able to obtain patents over the sweetener itself. No credit was given or payment made to the indigenous Africans who had used the sweetener for centuries, drawing accusations that the university had engaged in "biopiracy". The university retains several patents over the ingredient brazzein. [Source: Natural News [United States of America], 22 December 2008.] ♣



Facing it, always facing it, that's the way to get through. Face it.

Joseph Conrad