

BOREAL FORESTS

Supporting the development of non-timber forest products: lessons from the boreal forest of the Russian Federation

Over the past eight years, the International Union for the Conservation of Nature (IUCN) Russia and the Centre for Non-Timber Resources at Royal Roads University in Canada have been involved in developing practical approaches for supporting non-timber forest resource development in a number of communities across the boreal forest of the Russian Federation. Through funding from the Canadian International Development Agency, the DOEN Foundation, the Ford Foundation and the Ministry of Agriculture, Nature and Food Quality of the Netherlands, project partners have developed an approach to supporting NTFP development that may hold promise for other areas of the country as well as other parts of the world.

In many regions of the Russian Federation, the authorities are exploring the re-establishment of NTFP industries that last functioned during the Soviet era. In general, this recognition of the potential of the NTFP sector to contribute to local development is to be welcomed. However, the majority of the models being proposed appear to give little consideration to community-based processing and there is a risk that the role of the local population will be limited to harvesting, with the financial returns to community members being relatively low. Our projects have pursued a different approach: the creation of small-scale, community-based businesses focused on the production of high value-added products.

A recently completed project in Khanty-Mansiysk Autonomous Okrug-Ugra (funded through the Canada-Russia Northern Development Partnership Program – NORDEP) in western Siberia illustrates this approach. Among the activities included in this year-long project are the following:

- raising awareness and involvement of local communities in NTFP production through events such as a regional NTFP Festival, stands at local fairs and consultations with new and experienced entrepreneurs;
- assistance in the production and marketing of value-added NTFP products;
- assistance in the development of unique souvenir packaging (i.e. made from birch bark or including the

colours of the region on packaging and labelling) for value-added products that reflect the interest of local consumers in purchasing products from the region;

- marketing research with consumers in Khanty-Mansiysk, tourists and trade organizations to assess the demand for NTFP products, pricing and other requirements of the market; and
- development of business plans and investment proposals for specific NTFPs.



Market research determined that a significant market for NTFPs exists within the region – both among the resident population (1.5 million based on 2007 figures) and visitors (estimated at close to 1 million annually). Surprisingly – considering the local abundant resources – there are almost no locally produced NTFPs (except for souvenirs) on the shelves of stores in Khanty-Mansiysk. Instead there are products from the Komi Republic (frozen mushrooms and berries), Novosibirsk (Siberian pine nuts), the Altai region (honey) and even Tadjikistan (dried wild rose hips). In contrast, there appears to be a strong interest and pride in supporting “made in Ugra” products. Almost 60 percent of the over 200 consumers surveyed said they were attracted by the indication on the packages that the products were locally produced. The NTFPs of most interest included:

- shelled Siberian pine nuts – 27.5 percent;
- natural cosmetics (soap and fir oil in a birch bark box) – 38 percent;
- jam and herbal tea in a birch bark box – 19 percent;
- Siberian pine nuts packaged with cones in a birch bark box – 20 percent (respondents stressed the uniqueness of this product and that it can be considered an authentic souvenir from the north);
- dried mushrooms (in different types of packaging) – 33.5 percent.

The results indicate that “made in Ugra” products have definite potential in the regional market. All respondents asked whether they could buy the products and where they were available. Several respondents (business people) showed an interest in selling the proposed products in their shops, including those located in other regions of the Russian Federation. The Yugratorg company, which owns a chain of supermarkets across the Ugra, has also indicated a strong interest in selling the products.

As the project draws to a close, initial results indicate that NTFP development in the participating communities appears to be viable. A new community enterprise has commenced operations with confirmed orders for the 2009 production season. Obviously, many challenges remain and only time will tell whether these remote communities will participate successfully in the market for NTFPs. What does seem clear is that addressing the long-term interests of communities where the greatest value possible is captured at the local level implies the development of community-based businesses with active involvement of the local population in NTFP harvesting, processing and marketing activities.

(Contributed by: Tim Brigham, Nikolay Shmatkov and Anna Belyakova.)

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The Siberian Bikin watershed

The Siberian Bikin watershed represents a series of well-preserved, native forest ecosystem types and is the habitat of more than 60 endemic, rare and endangered plant and animal species. It is home to the reindeer herding Bikin Udege people.

This indigenous group continues its traditional way of life in a contemporary context, relying upon the region’s natural resources for its survival. (Source: GIAHS Web site: www.fao.org/sd/giahs/)

BOREAL FOREST FOODS AND DRINKS

Indigenous Canadian boreal wild foods are plentiful and delicious but in many cases they remain unknown. However, the products that can be made from these foods can rival those made in any other part of the world.

Balsam** (*Abies* spp.)

Balsam needles from balsam fir trees can be simmered and made into jelly. The jelly has a very fresh, distinctive and unique flavour that goes well with freshwater fish and various cheeses. Campers will also remember the taste of balsam on their meat or fish from the spluttering bursts of flame and smell as balsam branches ignite in a campfire.

Barberry** (*Berberis* spp.)

Barberries, the beautiful bright red fruits of the barberry bush, have a sharp original flavour. The berries are traditionally harvested after the first hard frost and fruit clusters can be seen well into midwinter when various winter birds finish them off. The unique thorns on barberry bushes are particularly sharp and painful so that harvesters have to wear gloves to harvest the berries. The berries may be slowly simmered and strained into a jelly. They are widespread in some boreal forests and were often used as a pectin in other fruit preserves. Barberry jelly can be eaten on toast, but is usually served as an accompaniment to game or fowl.

Bearberry* (*Arctostaphylos* spp.)

Easily found on rocky slopes, exposed areas or in dry forests and clearings, the bearberry may be cooked or boiled for tea. More popular uses involve the leaves of the plant, including as a urinary antiseptic, in tinctures and for other medicinal purposes. First Nations in Canada used dried bearberry leaves in smoking mixtures, the roots as pipes and the dried berries as jewellery when strung as a necklace. They also cooked the berry fruits in lard and then mixed them with other foods.

Blueberry* (*Vaccinium* spp.)

The velvet leafed or dwarf blueberry (also known as huckleberry) is a popular boreal berry thanks to its typically sweet flavour and ease of collection. High in vitamins A and C, berries are

commercially used in such diverse products as jams, juices, syrups, baked goods, liqueurs and beer. Blueberries are also useful as a dye, and many indigenous tribes of Canada use the berry to decorate the skin and for household items. These groups also made tea from the stems to treat diarrhoea and prevent pregnancy and from the roots to ease headaches. There is even a patent on the species for use as an oral antibacterial agent in Canada.

Cattail** (*Typha latifolia*)

Cattail plants are abundant across most of North America, and many other parts of the world. Numerous parts of the cattail make delicious foods, from fresh spring greens to flours made from the pollen or the roots. Cattail hearts can be harvested in the late spring when they are still very tender. They are similar to palm hearts but are smaller and a lot tastier and harvesting cattail hearts does not kill the plant. Wild food recipe books recommend them in a curry soup, in a sauce or bundled in a roll of ham and cheese and toasted.

Chokecherry** (*Prunus virginiana*)

Chokecherry jelly was a common condiment on farms generations ago. The berries are tart and flavoursome. While related to black cherries, chokecherries have a taste that is completely unique. Chokecherry bushes are often laden with fruit in August and September, but it takes a lot of chokecherries to make a jelly because the cherry is mainly stone with a thin skin of strong-flavoured cherry flesh. Chokecherry jelly is added to barbecue sauces, used as a glaze on meats or spread on toast.

Cloudberry** (*Rubus chamaemorus*)

The vast bogs of the north from Labrador to the Yukon are covered with cloudberry plants. These berries are highly regarded by the Cree indigenous groups. Cloudberry is related to the raspberry but the fruit is bigger and tastes like a cross between passionfruit and apricot. Cloudberry pair well with strong cheeses, mixed in desserts and with chocolate.

Cranberry* (*Viburnum trilobum*)

The high bush cranberry, found in moist boreal woods, has a tart, soft

fruit when ripe. Cranberries are famous as snacks and as additives to a large variety of foods when dried and sweetened. They also contribute flavour and nutrition to juices, chutneys, sauces, wine and cider. Indigenous groups in the boreal forests of Canada used cranberries in various ways, including whipping the fruit into a type of icecream. Some tribes also boiled the bark to relieve menstrual cramps and soothe sore throats. Cranberries can be frozen or dried in the sun for long-term storage.

Hazelnut* (*Corylus cornuta*)

Hazelnuts are extremely popular for use in sweets, baked goods and icecream as well as eaten raw or toasted. The plants are hardy and tolerant and grow easily. Gathered in autumn, tribes in Canada used to bury the nuts for around ten days to allow the husks to rot away. They were then eaten as a trail snack or sometimes ground into flour. The roots and inner bark create a blue dye, and the wood was often shaped into eating utensils because of its mild flavour. The milk of the nut was considered to cure coughs and colds.

Juniper* (*Juniperus communis*)

Juniper fruit is quite often used medicinally and as a flavouring in various foods and drinks, although large doses of the extract can prove fatal. This evergreen shrub is often harvested for decorative purposes such as centrepieces, bird houses and Christmas ornaments. It can season tea and coffee and is used commercially to flavour gin. The oil of the flower and incense made of the juniper wood and needles are found in aromatherapy. Indigenous peoples rarely ate juniper berries but burned the plant for fragrance, to deodorize and to purify the home – often to ward off evil spirits. Tea made from juniper was used for medicinal purposes, for example to treat swollen limbs and ankles.

Labrador tea* (*Ledum glandulosum*)

Found in bogs, swamps and moist boreal woods, this dominant, fragrant shrub is famous as an excellent tea despite the fact that it contains a narcotic toxin called Ledel (or Ledol). The tea, high in vitamin C, can be brewed to varying

strengths for different purposes. In its weak form it is best for drinking, and was used by different indigenous Canadian groups for both stimulation and relaxation. When brewed for long periods, it is useful for medicinal purposes with external application, mainly to treat various skin conditions and as a wash for lice. The Labrador tea plant is also utilized as a food flavouring and as an essential oil in aromatherapy. The leaves can be crushed and then blended with alcohol and glycerine to be used as an effective insect repellent. The leaves can also be used to create a "head" on beer.

Milkweed** (*Asclepias syriaca*)

The milkweed plant has often been cursed by farmers for its ability to colonize pastures where they are ignored by sheep and cattle. However, these amazing plants are essential for the life of our monarch butterflies. Milkweed shoots were an important early vegetable for many Canadian Aboriginal communities. Called little pigs in parts of Quebec, Canada, these fat little vegetables are picked midsummer before they get too big. Milkweed pods may be pickled in cider vinegar and spices. They make a unique and tasty appetizer. They are also used as capers and in risottos.

Mustard** (*Brassica campestris*)

There are a number of mustards growing in boreal forests, several of which were introduced from Europe or Asia, and several that are indigenous to North America. Mustard sauce is a traditional condiment of white wine and grain mustard. It is used on sandwiches, in salad dressings, in barbecue and other meat sauces and as a basting or rub.

Ox-eye daisy capers** (*Chrysanthemum leucanthemum*)

Ox-eye daisy capers are the flower buds of ox-eye daisies, which grow across much of Canada. They have a fresh herb-

like flavour and are not spicy like the European caper berry. The small flower buds are hand picked in late spring. They are used as capers with fish or stuffed in chicken breasts.

Sage* (*Salvia officinalis*)

Also called pasture, sage is an extremely aromatic plant, commonly used by First Nation tribes as a seasoning for rice or in stuffing for fish, game and poultry. It is popular as incense and can be used as an insect repellent and as an addition to fragrance sachets. Indigenous groups even use sage as a moccasin deodorizer and as toilet paper. It can also be used as a dye. Sage is found in sandy or gravelly soil and in dry rocky slopes and grasslands.

Salal berry** (*Gaultheria shallon*)

Salal berries were once one of the most important crops for the Aboriginal inhabitants of coastal British Columbia. Although the leaves are a common sight in florist shops, the berries are largely unknown outside the region. Their rich complex flavour has a wine-like sweetness to it and can be used in meat sauces and gravies.

Saskatoon berry* (*Amelanchier alnifolia*)

Also known as Juneberries, the Saskatoon berries can be found in both moist and dry boreal environments. These wild berries have a unique taste similar to almonds and are used in baking for pies, jellies and jams as well as in wine making. Most native groups in Canada harvest the berries and dry them, then eat them as a snack. Thanks to their natural sweetness they have often been mixed with other less palatable foods. The hard stems have been used as arrows, canes, for pipes, to dig, as rims in baskets and as parts of canoe frames. The plant is useful as fuel because it is considered to burn clean and not taint the flavour of fish, for



example. The berries are also harvested for dyeing baskets and other items.

Syrups**

Many varieties of syrups can be made from boreal products. The intense flavour of birch syrup lends itself best to marinades and dressings. Black locust flower syrup has a delicate aromatic taste. Maple syrup is the ever-popular sweet topping, originally received from the Ojibwe and Six Nations peoples. Wild rose petal syrup is a full rose-flavoured treat that can be used in baked products.

Wild mint* (*Mentha arvensis*)

An aromatic perennial, wild mint is located along stream banks, lake shores, wet meadows and in clearings. Widespread in boreal forests, it is edible and commercially available as a seasoning and as tea, its most common usage. Mint brew is used to cleanse morning breath and as a soothing tonic for upset stomachs and headaches. It is also typically found in fragrance sachets. (Sources: Boreal Centre for Conservation Enterprise* and Forbes Wild Foods**.)

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Ontario to preserve half of its boreal forest

Seattle, Washington. As news spreads of Ontario's commitment to protect over 55 million acres of Canada's boreal forest, leading international scientists and conservationists are expressing their strong support for Premier Dalton

McGuinty's science-based leadership, calling it "a conservation milestone".

Ontario's plan to protect 50 percent of its boreal forest is considered a conservation science first and the size of this commitment is unprecedented in North American history. "This is the kind of bold leadership and large-scale thinking that the world needs as

we confront the challenges of global warming," said Dr Terry Root of Stanford University, who is a lead author for the United Nations International Panel on Climate Change.

The announcement widely cited the recommendations made by 1 500 scientists to the Canadian Government last May to set

aside at least half of Canada's boreal forest in large, interconnected protected areas to guard against climate change and protect internationally significant wildlife populations. These concerned scientists, led in part by Dr Root, include some of the world's most notable ecologists, climatologists and conservation biologists.

Scientists identify the 1.4 billion-acre Canadian boreal forest as one of the world's most significant and largest intact forest and wetland ecosystems.

The boreal forest:

- is the world's single-largest terrestrial carbon storehouse and alone stores 186 billion tonnes of carbon – equivalent to 27 years of the world's carbon dioxide fossil fuel emissions;
- contains the majority of North America's fresh, unfrozen water;
- hosts some of the planet's largest populations of wolves, grizzly bears and woodland caribou;
- provides nesting grounds and nursery for billions of migratory songbirds and waterfowl; half of North America's birds are dependent on the forest for their survival.

Dr David Schindler, winner of the 1991 Stockholm Water Prize, added, "Premier McGuinty has long-term vision, recognizing that storing carbon, protecting biodiversity and traditional lifestyles, and maintaining freshwater supplies are more important than immediate profits. Now the rest of Canada must set aside equivalent areas".

Scientists worldwide recommend that a target of 50 percent protection of an ecosystem is necessary to sustain it over the long term. Overall, only 10 percent of Canada's boreal forest is currently protected.

For the past decade, the Pew Environment Group, through its Canadian Boreal Initiative Project, has been working with First Nations, industry, government and conservationists to preserve Canada's boreal forest, an internationally significant ecosystem for the world's climate and biodiversity. (*Source:* Patricia S. De Angelis, United States Fish and Wildlife Service, United States of America, July 2008.)

The Northern Forest Diversification Centre: an exercise in NTFP-based community development in Canada's boreal forest

Over the past ten to 15 years, recognition of the potential role of the NTFP sector in creating economic opportunities for rural communities has continued to grow in Canada. One of the best known



interventions, especially in Canada's boreal forest region, has been the work of the Northern Forest Diversification Centre (NFDC) located in The Pas, Manitoba, operating as an arm of The University College of the North. Beginning in the year 2000, NFDC developed as a training, research, marketing and service centre for the development of the NTFP sector in northern Manitoba. Over the next six years, the programme reached out to dozens of communities and hundreds of harvesters, creating an industry from overlooked resources where little or nothing (in terms of NTFP sales) existed before.

From a Manitoba perspective, those interested in and benefiting from the NTFP industry tend to be those people who are standing on the sidelines of society for a range of reasons – usually because of a lack of formal education or the lack of employment opportunities in their communities. For these people, even the opportunity to earn relatively small amounts of additional cash income (in the few hundreds to few thousands of dollars) can mean the difference in terms of being able to pay their bills or purchase goods that many in other areas of Canada take for granted.

Over the course of its existence, NFDC has trained harvesters across northern Manitoba in good harvesting practices, bush safety, post-harvest handling, basic value-added opportunities and a range of other topics. Although training was only delivered to approximately 100 harvesters in eight communities, the centre ended up purchasing products from over 400 harvesters in 25 communities, an indication of the reach and attraction of the programme and the opportunities it provided. At the height of the programme, NFDC was marketing over 100 products, including wild tea blends, skin salves, sweet

grass (largely for the Aboriginal and non-Aboriginal ceremonial market), sweet flag root and bearberry leaf (for the medicinal herb market), twig and balsam wreaths, diamond willow products and antler jewellery. It also handled bulk shipments of medicinal botanicals such as dried senega root, black poplar buds, and high-bush cranberry bark for sale to brokers in the United State of America. In addition to providing marketing services, NFDC assisted emerging community-based entrepreneurs in the development of new products and with packaging, labelling and pricing. Over the six years NFDC was active in the marketplace, hundreds of thousands of dollars from NTFP sales were distributed to communities across the north. For some products, such as sweet grass and senega root that had pre-existing markets, the entry of NFDC as a broker helped put upward pressure on prices, directly benefiting the dozens of harvesters who depended on these products for part of their income.

As with any new venture, NFDC faced its share of challenges, among them the struggle to provide support services to far-flung entrepreneurs in remote communities, maintaining the support of decision-makers who did not necessarily understand the sector or the function of a natural resource-based social enterprise, and creating new markets or penetrating existing ones to maintain sales and retain harvester interest. NFDC ceased operations after funding for the programme ended in late 2006. To its credit, NFDC spawned a number of small, community-based businesses that continue to develop even without the ongoing support of the centre. However, the significant downturn in NTFP-related activity since formal operations ceased suggests that NFDC played an essential role in developing opportunities for NTFP harvesters and entrepreneurs in communities where few other economic opportunities exist. Interest has been expressed in resurrecting some of the services provided by NFDC, and a private sector partner has taken on part of the role of developing the market for northern NTFPs. The hope remains that this groundbreaking programme that saw many successes will re-emerge in a new form once again to create much needed opportunities for the residents of Manitoba's boreal forest.

(*Contributed by:* Dave Buck [retired Manager, Northern Forest Diversification Centre, Manitoba] and Tim Brigham [Royal Roads University, Victoria].)

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Boreal forest bounty

Boreal forest bounty (ISBN 1-4251-1426-1) is a compendium of market information on selected species of botanicals that grow in the boreal forest region of British Columbia and across Canada. It is a resource guide for enabling development of conservation-based enterprise in the northern/rural agricultural, First Nation and resource communities with particular emphasis on the emerging agroforestry and non-timber forest products sector.

The guide features profiles on 30 plant species known to have market potential through value-added processing in various parts of Canada. Each profile includes botanical descriptions, information on commercial applications, First Nations uses, accessibility for harvest, environmental sensitivity, market locations, harvesting specifications, customer requirements, prices, cultivation potential, processing technology, government regulations and transportation costs. Additional resources in the guide include an overview on the boreal forest, and various resources for developing conservation-based enterprise.

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Lichen from the north of Finland

The lichen-covered heath on Hailuoto island in the northern part of the Gulf of Bothnia is a friendly place. Pines of moderate height stand here and there, letting the sun's rays reach the ground, which is covered with grey star-tipped reindeer lichen, or just star reindeer lichen (*Cladonia stellaris*).

Pickers are employed by the lichen-exporting company Polar-Moos. They deftly gather the best balls of lichen, taking care not to pick everything. Lichen grows to a suitable size for picking in five to eight years, which is the time the pickers have to wait before returning to the same area.

Fascinating in appearance, star reindeer lichen resembles a mushroom covered with lace, and it is actually classified as a mushroom. However, to be exact, lichen consists of two species, a fungus and an alga, which grow in a symbiosis that benefits both.

Polar-Moos is the largest supplier of decorative lichen and other lichen products in Europe, with an annual turnover of €1.5 million. It has a regular staff of nine, but each year from May to October the company also employs some 20 seasonal workers. With no rain the dry lichen easily breaks into small pieces, so the forest needs to be watered. After a quarter of an hour of watering, it is possible to start picking the lichen. Some of the pickers collect lichen and different kinds of mosses, while the rest make arrangements of the lichen picked.

The largest clients are florists' supplies wholesalers. Florists transform the grey balls into decorations. It is during autumn and winter that lichen makes a very popular

decorating material in graveyards, because it keeps its light colour even when wet, and thus stands out from the dark gravestones. In addition to this, it withstands frost. This is why the best season for lichen is around the Western Christian All Saints' Day (1 November) in the autumn. The main area for the company's exports is German-speaking Central Europe.

Lichen is gathered not only in Hailuoto, but also elsewhere in northern Finnish Ostrobothnia. Suitable places for lichen to grow are the sandy heaths and eskers formed by the continental ice moving north at the end of the Ice Age.

Collecting lichen is not everybody's right, and compensation must be paid to landowners for each package of lichen. Among the landowners, the most important partner of Polar-Moos is the forest industry company UPM.

A quarter of the lichen sold by Polar-Moos comes from the Russian Federation.

Gaining a livelihood from lichen is, however, becoming increasingly difficult, because Swedish producers sell it at 40 percent lower prices. The Finnish producers suspect that the Swedes may not be taking care of all required employment expenses, which is why the association of lichen exporters in Finland has appealed to the EU Commissioner responsible for fair competition.

"But this is a dying tradition," says Executive Director and owner of Polar-Moos, Markku Sipola, with regret. The top year of lichen exports was 1972, when half a million cartons were exported – with 3.5 kg lichen in each. Now the amount is some 100 000 boxes. (Source: Forest.fi Web site, www.forest.fi)

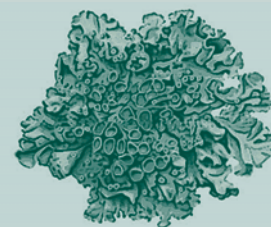
LICHEN IS ALSO DYED AND SEWN

The tiny trees and shrubs beside the tracks of miniature railways are made of star reindeer lichen as are the parks in the scale models constructed by architects to illustrate their plans for housing estates.

The best lichen goes to export as it is, but the lower grades are dyed green, red or yellow. This is why Polar-Moos also has a dyeing shop in Hailuoto. In the shop the lichen is first immersed in the liquid dye, after which it is salted in

order to keep it supple and make it fire-resistant. The work is difficult, because it is not easy to dye the lichen evenly.

The dyeing shop also houses a machine for sewing lichen, which is used to make ornamental ribbons of lichen.



WILDLIFE

2009 Year of the Gorilla

Renowned primatologist Jane Goodall, Ph.D., will serve as the official patron of the 2009 Year of the Gorilla (YoG), a 12-month campaign aimed at improving conservation of humankind's closest relatives and their habitats by bettering the livelihoods and incomes of local people. His Serene Highness Prince Albert II of Monaco launched the YoG initiative on 1 December 2008 at the opening of a United Nations wildlife conference in Rome, Italy.

The YoG campaign seeks to improve the management of national and cross-border primate populations, as well as those living in national parks, by strengthening cooperation between range states and providing improved support for rangers and other key personnel.

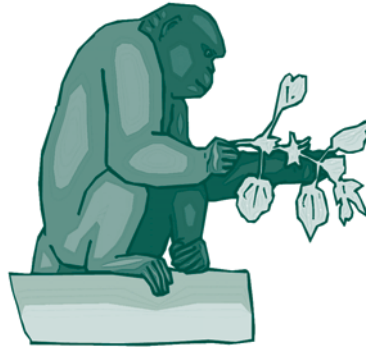
YoG is a joint initiative of the United Nations Environment Programme's Convention on Migratory Species (UNEP-CMS); the UNEP-United Nations Educational, Scientific and Cultural Organization (UNESCO) Great Ape Survival Partnership (GRASP); and the World Association of Zoos and Aquariums (WAZA).

"People living in and around the last forested areas are struggling to survive," said Dr Goodall. "If we can't help these people find ways of living that do not involve continual destruction of the forest, we shall fail in our efforts to protect these wonderful great apes – our closest living relatives."

Dr Goodall also underlined the importance of community-centred conservation efforts such as those detailed in the YoG action plan and those currently managed by the Jane Goodall Institute (JGI) in the United Republic of Tanzania and the Democratic Republic of the Congo. JGI's Lake Tanganyika Catchment Reforestation and Education (TACARE) programme, which is active in 24 Tanzanian villages around Gombe National Park, involves health care projects, forestry protection, training in sustainable farming methods, forest regeneration, water and sanitation projects, women's initiatives, microcredit programmes and education. As a result of the programme, local people have partnered with JGI to put aside land for forest restoration and to protect the remaining forest, which is home to many species, including endangered chimpanzees.

"These initiatives benefit more than the great apes," said Dr Goodall. "They help prevent the spread of contagious disease. They reduce poverty and protect forests. And they help slow global climate change. Finally,

in areas where there is competition for diminishing natural resources with potential for violence, programmes of this kind add to the security of the region." (Source: Press@PMDFEXT, 5 December 2008.)



Two African nations team up to protect world's rarest ape

Just 300 Cross River gorillas remain in the wild, making them the world's most endangered apes, if not the world's most endangered primates.

The Governments of Nigeria and Cameroon have now agreed to work together to help save the Cross River gorilla, which only exists within their borders. At a meeting held last week, the two nations agreed to "improve transboundary cooperation to protect the critically endangered species, as well as other endangered wildlife", according to a report from the Environment News Service.

Participating in the agreement were representatives of state parks from each country, who will now work to "reduce the bushmeat trade and illegal logging, strengthen field monitoring, increase community involvement and conservation education, and improve law enforcement within the parks".

The meeting to hammer out this agreement was made possible through the financial support of the World Wide Fund for Nature (WWF), the Wildlife Conservation Society and the United States Fish and Wildlife Service Great Apes Conservation Fund.

The critically endangered Cross River gorilla (*Gorilla gorilla diehli*) is a subspecies of the western gorilla (*Gorilla gorilla*). The Cross River gorilla's population is extremely fragmented, with eight to 11 groups separated by extensive local farmlands. (Source: *Plenty Magazine*, New York [United States of America], 9 September 2008.)

Orangutans concoct plant-based soothing balm

Indonesian wild orangutans have demonstrated a certain degree of medicinal savvy by deploying naturally occurring anti-inflammatory drugs to "treat aches and pains", as the *New Scientist* puts it.

Four of the Bornean orangutans (*Pongo pygmaeus*) were spotted by Cambridge University primatologist Helen Morrogh-Bernard in the Sabangau Peat Swamp Forest in central Kalimantan, preparing a "soothing balm".

Back in 2005, Morrogh-Bernard watched as an adult female picked a handful of leaves from a plant, chewed them and used saliva to produce a green-white lather. She then "scooped up some of the lather with her right hand and applied it up and down the back of her left arm, from the base of the shoulder to the wrist, just as a person would apply sunscreen". Morrogh-Bernard noted: "She was concentrating on her arm only and was methodical in the way she was applying the soapy foam. I knew this must be some form of self-medication."

The orangutan finally ditched the leaves, which allowed Morrogh-Bernard to identify them as belonging to the genus *Commelina*. Significantly, orangutans do not eat these plants as part of their normal diet, and local indigenous people are also aware of their anti-inflammatory properties.

Morrogh-Bernard has since clocked three other orangutans using their home-brew balm, saying it "links apes and humans directly". While she said the former "may not have learned how to apply the anti-inflammatory ointment from local people", the opposite may be true. (Morrogh-Bernard's findings are published in the *International Journal of Primatology*.) (Source: Register [United Kingdom], 28 July 2008.)

Bushmeat a threat to the United Kingdom

The illegal trafficking of West African bushmeat is posing a serious threat to the United Kingdom, claims a Conservative (Tory) Member of Parliament. Jim Paice, Tory spokesman for agriculture and rural affairs, says that the recent cutting back of Customs officials, who patrol the United Kingdom borders, is to blame for the high volumes of illegal meat being smuggled into the country. "Bushmeat from West Africa has the huge potential for tropical diseases, such as the Ebola virus, to come

BUSHMEAT: THE OTHER FOOD CRISIS

Conservationists have long argued that the hunting of terrestrial wildlife for food – including mammals, birds, reptiles and amphibians – poses a threat to the survival of many tropical forest species and ecosystems. A new study suggests we should be equally concerned that the so-called “bushmeat crisis” is also a food security crisis for many forest-dependent people.

“*Conservation and use of wildlife-based resources: the bushmeat crisis*”, a technical paper published by the Secretariat of the Convention on Biological Diversity and the Center for International Forestry Research (CIFOR), summarizes the state of knowledge on this controversial topic. According to Nasi *et al.*, the bushmeat trade constitutes a significant, if largely hidden, component of the economies of tropical forest countries, with estimates ranging from US\$42–205 million per year for countries in West and Central Africa. However, “voluminous and varied” empirical evidence suggests that current rates of bushmeat extraction are unsustainable, and are leading to wildlife depletion in many areas. Large mammal species are particularly vulnerable and many are already locally extinct.

The “empty forest syndrome” is not just of interest to conservationists.

Bushmeat is an important source of protein and fats in rural diets – up to 80 percent in Central Africa – as well as an important seasonal safety net. And in many countries there is no clear substitute available if wild meat sources were to be depleted or off-take reduced to sustainable levels.

Bushmeat’s importance to rural livelihoods is not restricted to its direct consumption. Research suggests that the poorest households are more dependent than the rich on bushmeat sales to local and urban markets. Thus, the conventional wisdom that commercial trade can be banned without harming the subsistence needs of the poor is misguided.

The report suggests that sustainable management of bushmeat resources requires different approaches for different species and circumstances. For example, species with low intrinsic population growth rates and high dependence on undisturbed habitat – such as gorillas – are particularly vulnerable to overhunting. By contrast, fast reproducing generalist species that thrive in agricultural mosaics – such as duikers or rodents – may be very resilient to hunting pressure. Blanket bans on hunting and trade that do not discriminate between these extremes are bound to fail.

The authors argue that the solution to the bushmeat crisis is a more secure rights

regime: if local people are guaranteed the benefits of sustainable land use and hunting practices, they will be willing to invest in sound management and negotiate selective hunting regimes. Sustainable management of bushmeat resources requires bringing the sector out into the open, removing the stigma of illegality and including wild meat consumption in national statistics and planning.

Reframing the bushmeat problem from one of international animal welfare to one of sustainable livelihoods – and part of the global food crisis – might be a good place to start.

The study is available in both English and French. (Source: CIFOR POLEX, 17 July 2008.)

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www.cbd.int/doc/publications/cbd-ts-33-fr.pdf (French).

in, which could pose a serious public health issue,” said Paice.

New figures in a government report have shown that there have been no prosecutions for illegal meat smuggling this year. However, between 2006 and 2007, when there were increased patrols to tackle the threat of bird flu, more than 35 000 seizures were made. The Conservative Party is now proposing plans for tackling illegal meat imports, which would include an X-ray system to scan all bags coming into the United Kingdom. Over the past 12 months, both the Department for Environment, Food and Rural Affairs (Defra) and the Customs have been running awareness-raising campaigns. Last week Defra launched a short film, “Don’t Bring Me Back”, to spread the message about the serious effects that importing meat illegally could bring. (Source: *The Voice*, [United Kingdom], 18 August 2008.)



Viet Nam illegal wildlife trade eating away at biodiversity

Hanoi. Viet Nam’s appetite for illegal wildlife meat and demand for traditional medicine are devastating animal and plant species within and beyond its borders, experts warn in two new reports. Viet Nam is one of Southeast Asia’s most biodiverse countries, but some species may be lost even before they become known to science as a result of an illegal global trade believed to be trailing off drugs and gun running.

Two new reports reveal that despite Viet Nam’s international commitments to combat the trade, the smuggling of tigers, monkeys, snakes, pangolins and other animals to and through the country are booming.

One study estimated that up to 4 000 tonnes of live animals or meat, skins, ground bones and other illegal products are trafficked into and out of Viet Nam per year, generating more than US\$67 million in revenues.

Species are mostly sourced from Viet Nam’s national parks and the neighbouring Lao People’s Democratic Republic and Cambodia, as well as Malaysia, to be consumed in Viet Nam, China, the Republic of Korea, Taiwan Province of China and Japan, according to the study based on hundreds of interviews.

The largest volume of illegal wildlife goods is smuggled across the Viet Nam–China

border, with an estimated 2 500–3 500 kg flowing daily through the two major border gates.

There have been high-profile crackdowns. In a recent case, Vietnamese police seized over 2 tonnes of live snakes and 770 kg of tortoises from the Lao People's Democratic Republic en route to China.

But one report estimated that the total value of confiscated wildlife accounts for only 3 percent of the illegal trade and that the authorities are at a disadvantage as individual forest rangers police an average of 1 400 ha of forest at a monthly wage of about US\$50.

Hanoi is Viet Nam's largest market for illegal wildlife meat, with revenues of over US\$12 000/day, the report said. The most popular species served in Hanoi were snakes, palm civets, monitor lizards, porcupines, leopards, pangolins, monkeys, forest pigs, hard-shell turtles, soft-shell turtles, civets, boas and birds.

The other market fuelling the trade is traditional Vietnamese and Chinese medicine, said a report by the wildlife monitoring network TRAFFIC.

The shop owners who offered the illicit goods, the TRAFFIC report found, were "well organized, each claiming that they were shielded from investigations through protection by enforcement personnel". (Source: AFP [Hanoi], 3 August 2008.)

Social and cultural values of hunting

Wildlife and hunting are intimately linked to many cultures throughout the world's tropical forests, even if in some cases the meat is only of minor nutritional importance. Important social and cultural values are linked to foods and medicines derived from wild resources. Therefore, while hunting provides meat and income it also remains an important social and cultural tradition for many peoples (both in developed and in developing countries).

Acquisition of animal parts as cultural artefacts, for personal adornment or for hunting trophies, is still a widespread practice throughout tropical forest regions and the rest of the world. In many cultures, to be a hunter is essential in gaining respect, achieving manhood or winning a bride. Hence peoples hunt even when they have alternative sources of nutrition or income. These links between hunting, wildlife, religion, mythology and sociology of forest-dwelling peoples have to be considered in conjunction with sound conservation and management plans. (Source: extracted from: R. Nasi *et al.* 2008. *Conservation and use of*

wildlife-based resources: the bushmeat crisis. Technical Series 33. Montreal, Secretariat of the Convention on Biological Diversity and Bogor, Center for International Forestry Research [CIFOR].)

Responsible hunting in Germany

Hunters in Germany bear the responsibility of protecting and sustaining over 100 species under the Federal Hunting Act and many of the 348 347 licensed hunters in the country voluntarily perform conservation and landscape administration work. Activities range from assisting in the mapping of habitat corridors to managing protected areas. Hunters also commonly support specific species. For example, between 2004 and 2006, the hunting community supplied €400 000 for otter and hare population protection, as well as €272 000 towards habitat maintenance for the black grouse.

In 2000, the German Hunting Association (Deutscher Jagdschutzverband, or DJV), which is made up of various Lander association members and accounts for nearly 85 percent of all licensed hunters in the country, launched a national wildlife information system (WILD). WILD is a long-term project to provide consistent data on population densities, trends and impacts of environmental factors such as weather and predation to monitor selected wildlife species. The information (available online at www.jagdnetz.de) also helps in the development of protection and sustainable use strategies. (Source: BfN, 2008. *Nature Data 2008*. Bonn, Germany, Federal Agency for Nature Conservation (BfN), pp. 81–83. ISBN 978-3-7843-3859-0.)

The African grey parrot trade in Cameroon

The African grey parrot (*Psittacus erithacus erithacus*) is the most hunted bird in Cameroon. Thousands of grey parrots are captured each year for local consumption and export.

Cameroon accounted for 50 percent of the total specimens exported from all countries in 1995 and is still one of the highest exporters of African grey parrots today. Prior to 1993, when restrictions on export quotas were decided by the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) at 12 000 birds, a yearly average of 14 000 parrots were exported from Cameroon. Official figures do not account for parrots that are smuggled across borders into neighbouring countries, those that are consumed and those that die in the process of trapping, transportation and domestication.



Cameroon started to export African grey parrots to South Africa in 1993, with a reported 2 095 birds. Most of the African grey parrots from Cameroon are exported to the United States of America and the European Union countries, with France as transit point.

Poaching of African grey parrots is rampant in Cameroon because the Government has done very little to enforce antipoaching laws. People who succeed in having official capture permits have many ways of forging and multiplying them for their close associates, who also become permit owners. Worse still, quotas for live capture are never adhered to. Government officials are accused of conniving with trappers and licencees to exceed official quotas. Law enforcement officers at border posts are bribed by smugglers to allow parrots across borders to neighbouring countries.

However, severe law enforcement may not suffice to curb unsustainable exploitation because poachers are poor and the income from such activities is very important for many impoverished families. Therefore, the best approach to stop poaching is to educate local people, provide alternative sources of income and show the local people how to take care of the resources themselves.

(Source: Case study on African grey parrots in Cameroon. In *Trade measures – tools to promote the sustainable use of NWFP? FAO Non-Wood Forest Products Working Document 6*; www.fao.org/docrep/010/k0457e/k0457e25.htm#TopOfPage) ♣

**Until the lions have their historians,
tales of the hunt shall always glorify
the hunter.**

African proverb