

TRAFFIC DISPATCHES

Number 14 June 2000

Bush meat utilisation depletes wildlife in East and Southern Africa

Many wildlife populations in east and southern Africa are facing a lean future. The illegal killing of wild animals for meat, the so-called use and trade of 'bush meat', is believed to be one of the greatest direct causes of the decline of wildlife numbers outside of protected areas.

While many rural Africans struggle for survival amidst endemic poverty and frequent famine, wild animals continue to be an economic resource of major importance, particularly as food. Wildlife is critically important as a source of cheap protein for malnourished people and, when traded, as earnings in cash where few alternative sources of income exist. But such use and trade is widely prohibited

by law in the countries of East and Southern Africa.

To date, most research on bush meat has been focussed on west and central African countries. To gather more substantial information on the situation in other parts of Africa, TRAFFIC conducted a two-year review on trade and utilisation of wild meat in seven east and southern African countries (Botswana, Kenya, Malawi, Mozambique, Tanzania, Zambia and Zimbabwe). The study "*Food For Thought: The Utilisation and Trade of Wild Meat in Eastern and Southern Africa*" by Rob Barnett, TRAFFIC East/Southern Africa, will be released on 18 July 2000.

This study documents the utilisation of wild meat in the region, its economic value to rural communities, and the impact of harvest on protected areas and individual species valued in the trade.

A total of 23 surveys were conducted from 1997 to 1998, of which 16 were focused on illegal use of wildlife. A diversity of rural and urban areas was targeted and approximately 6,000 respondents contributed to the collection of baseline data.

Versatile source of food and protein

A wide variety of species - from insects, rodents and birds, to duikers, elephants, and impalas - are utilised regularly throughout the areas studied. Bush meat also affects a wide range of communities, from traditional hunter/gatherer societies, to agro-pastoral and pastoral communities as well as urban centres in the region. Among the majority of the people, bush meat is recognised as a valued resource and consumed regularly on daily, weekly or



Freidkin Conservation Trust

Decomposing carcass. Hundreds of animals are caught but only few are taken and majority left behind.

monthly basis.

For example, the study found that in Kitui District, Kenya, about 14.1 kg of bush meat per household is consumed by 80% of the households each month and in the Kweneng rural area of Botswana, 46% of households consume at least 18.2 kg of bush meat every month. In many areas bush meat also represents the only viable source of meat protein, with domestic meat being prohibitively expensive and largely unavailable.

With increasing urbanisation, a key trend within all countries of the study is a continuing reliance on affordable sources of bush meat protein. For example, in the urban survey area of Maputo Province, Mozambique, a substantial trade of more than 50 metric tonnes (mt) per month of bush meat exists, with the supply emanating from numerous, often distant, source areas. Such commercialised urban trade is also extensive elsewhere, for example in Lusaka, Zambia.

In six of the seven countries surveyed, bush meat was found to be

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Far From A Cure: Tiger Trade revisited

Despite a marked fall in the consumption of tiger-bone medicines in former major consuming States, there is little evidence of a major reduction in poaching of some key tiger populations.

A new TRAFFIC report *Far From A Cure: The Tiger Trade Revisited* released in March 2000, examined the tiger trade in the late 1990s and revealed that use of tiger parts in traditional Asian medicine continues to be a threat to wild tigers.

However, the study also reports of progress made in Tiger trade control since the early 1990s. The Tiger has not become extinct in any range State, despite fears in the early 1990s that this may happen by the turn of the millenium.

There has been greatly increased investment in all aspects of Tiger conservation, including anti-poaching, biological monitoring, local community development, public education, and capacity-building. Progress in India, Nepal and the Russian Federation is particularly notable, although problems remain.

In the recent years markets have

also seen the trade shifting more in to tiger skins and other products beside bone.

TRAFFIC International, TRAFFIC offices in the East Asia, Southeast Asia, Europe, India and Oceania, as well as WWF International and a number of WWF national organisations participated in the worldwide launch urging the tiger range States, especially key countries in Southeast Asia, to strictly enforce trade bans, improve anti-poaching capacity, develop specialised enforcement units for undercover investigations and provide incentives against commercial tiger poaching.

The launch also stressed the importance of close co-operation and work with traditional medicine practitioners. This community can play an important role in eliminating any remaining trade, promoting the use of substitutes and raising conservation awareness among consumers of such medicine.

Also management solutions, such as compensation, livestock protection and management as well as developing alternative livelihoods, must be urgently developed.

This report was published with financial support from Save the Tiger Fund (a special project of the National Fish and Wildlife Foundation in partnership with ExxonMobil), Johnson and Johnson, WWF-UK, WWF-US and WWF-Japan.



TRAFFIC East Asia

Specific media events were held by TRAFFIC and WWF offices in the UK, Hong Kong (in photo) and India.

TRAFFIC staff news

Welcome

Claire Nugent has started her work as the new Programme Administration and Evaluation Officer in TRAFFIC International in March 2000.

Mary Hansford has started her work at TRAFFIC International in March 2000 replacing Rose Warwick as the new administrative officer.

Susanne Honnef started as the new Medicine and Plants Officer in TRAFFIC Europe-Germany in May 2000.

Rolie Srivastava has joined TRAFFIC Europe also in May and will be working as Project Consultant to support the establishment of European Medicinal Plant Resources Secreteriat until November 2000.

Janet Ong has started as Administrative Officer at TRAFFIC Southeast Asia in May 2000.

Lorena Hidalgo will start as Administrative Assistant at TRAFFIC South America in the end of June 2000.

Moving

Nina Marshall has left her position as Deputy Director at TRAFFIC East/Southern Africa to take up a new challenge as Assistant Director in TRAFFIC Europe Regional Office in mid-June 2000.

Julie Thompson the National Representative of TRAFFIC North America-Canada will be moving to Vietnam in August 2000 to take up a new post as the National Representative at TRAFFIC Southeast Asia-Vietnam.

TRAFFIC Dispatches

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TRAFFIC is a joint programme of IUCN-The World Conservation Union and WWF*-World Wide Fund for Nature. It aims to help ensure that trade in wild plants and animals is not a threat to the conservation of nature.

The TRAFFIC Network works in co-operation with the Secretariat of the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES).

TRAFFIC Dispatches is published by TRAFFIC International to keep the Network's partners and supporters informed about our activities and accomplishments.

* WWF is known as World Wildlife Fund in Canada and the USA.



TRAFFIC completes a study on butterfly trade in Europe

by Peter Schütz, Consultant, TRAFFIC Europe and
Roland Melisch, National Representative, TRAFFIC Europe-Germany

Many butterflies and beetles are threatened by commercial trade. Earlier observations by a variety of publications have indicated a significant commercial trade - both legal and illegal - in insects. A new TRAFFIC study shows that this trade has continued over the years and insect trade fairs in Germany, France, Switzerland and the Czech Republic continue to offer many endangered butterfly and beetle species for sale for demanding public.

The report titled 'Flügel hinter Glas. Der Insektenhandel in Deutschland unter besonderer Berücksichtigung der Schmetterlinge' by Peter Schütz will be released later this month. It focuses on butterflies but also examines the beetle trade. A total of 12 insect trade fairs were visited in Germany, France, Switzerland and in the Czech Republic between September 1996 and November 1997. In addition, offers on threatened insects that appeared in journals and magazines specialising in entomology that were published from 1995 to 1997 were analysed. The overall aim was to assess and analyse the butterfly and beetle species offered, their prices, origin, quantity, purpose of trade and form of presentation in trade. In the process, the study also aimed to highlight threatened and/or protected species offered on the market and underline possible solutions to overcome the conservation problems encountered.

The study found that most of the species in trade were not protected by any national or international law or regulations. However, a big selection of the offered species still remained subject to the German Federal Species Conservation Act (Bundesartenschutzverordnung, BArtSchV) and other countries' domestic legislation prohibiting the species in question to be captured, on sale and traded without prior official permission.

The study found that 250 butterfly species offered for sale were protected by the BArtSchV, including all domestic species threatened by trade. Additionally, 21 out of 37 (57%) beetle species listed under the BArtSchV

were illegally offered for sale at insect trade fairs.

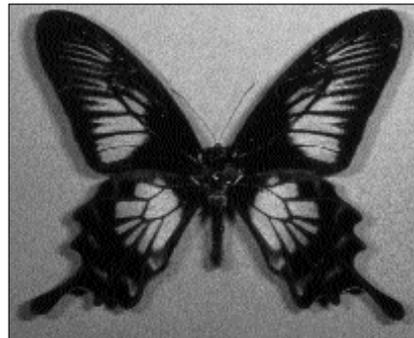
21 out of 31 CITES-listed butterfly species (among them *Parnassius apollo* and *Ornithoptera alexandrae*) that were recorded during the study period were not allowed for trade and sale according to a EU Council regulation and were thus offered illegally. In addition, as many as 14 of 55 beetle species that were listed on the IUCN Red list (1996), as well as 39 out of 238 butterfly species, were offered on the markets surveyed. Among them were *Atrophaneura jophon* (critically endangered) and *Ornithoptera alexandrae* (endangered).

Prices for butterflies ranged between DM0.20 (US\$0.1) for some specimens to DM 7,000.00 (US\$3,400) for a pair of *Ornithoptera meridionalis*, a birdwing species *Ornithoptera meridionalis*. Exotic species offered outnumbered the palaeartic (Eurasian) ones by far. After analysing international trade data, the study found that Germany is the fourth biggest importer of CITES-listed butterflies after Japan, the USA and the UK. About 81% of all CITES-listed butterflies traded worldwide were imported for commercial purposes. More than half of these specimens came from ranching or farming programmes, and about 11% were of wild-caught origin. With respect to non-CITES butterfly species, the study registered an increase of Eastern European, Russian and Central Asian species for sale. However, with the exception of the CITES data mentioned above, there are no statistics available giving information about general trade in

insect species.

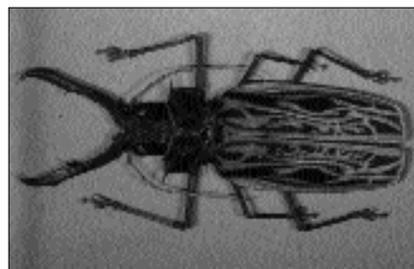
Every species for which there is a demand was for sale on the market. In most of the insect trade fairs surveyed, the species' population, conservation or protection status appeared to have very little, if any influence on the behaviour of insect traders - as was also the case with the existing legal restrictions.

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Critically endangered Sri Lankan Rose *Atrophaneura jophon* was offered for sale in most of the European insect trade fairs surveyed.

Price for *Macrodonia cervicornis* originating from Brazil and Peru varied between DM30 (\$US15) and DM200 (\$US97) in fairs surveyed.



Pangolin distribution and trade in East and Northeast India

by Manoj Misra, Director and Fahmeeda Hanfee, Senior Project Officer, TRAFFIC India

Pangolins in India are widespread but little known and appreciated. There is a low intensity and low profile illegal trade flourishing in village markets (*haats*), which could accumulatively be significant and of conservation concern. Belonging to the family Manidae, two species of Pangolin, namely the Indian Pangolin (*Manis crassicaudata*) and the Chinese Pangolin (*Manis pentadactyla*), are reported at least from 22 protected areas in the country. Both these species are given the highest degree of legal protection i.e listed in Schedule 1 under the Wildlife (Protection) Act, 1972, of India.

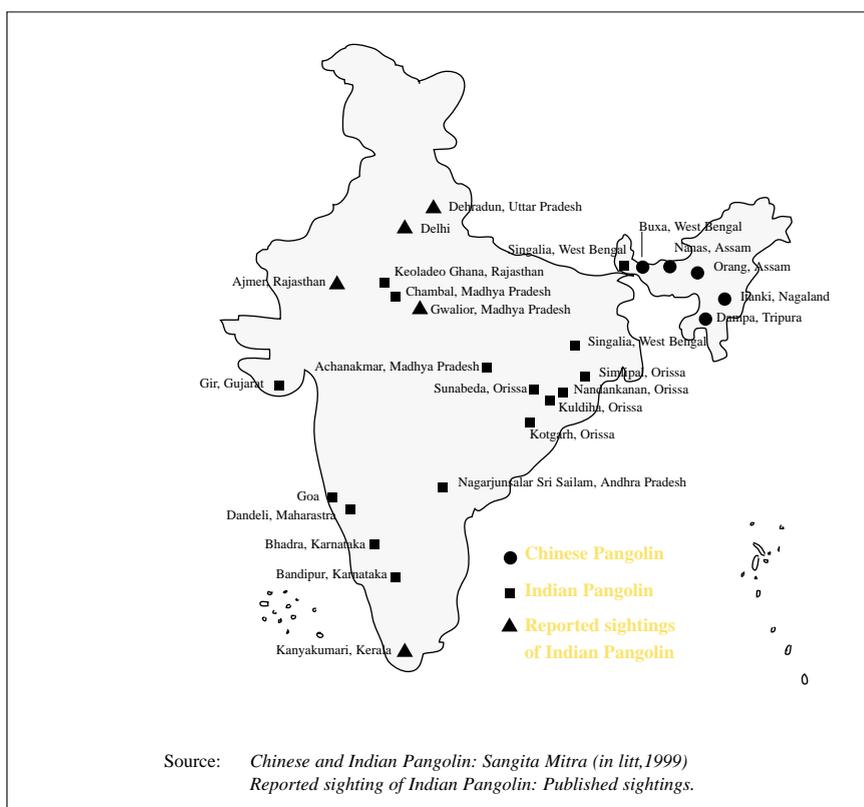
In order to determine the nature and volume of trade in pangolin scales and parts and its impact (if any) on natural populations in the wild, TRAFFIC India undertook a field survey in parts of West Bengal and Orissa in East India. The field work was carried out by the Indian Society for Wildlife Research, Calcutta between June 1997 and January 1998 in the forests of several areas of West Bengal and Orissa.

The field investigators interviewed 209 villagers and 12 forest officers, collecting information about species sighting, as well as seizures of animals and their parts. Previously identified urban and rural '*haats*', were visited to estimate the nature and volume of trade.

Main threats

Found in a variety of habitats, including primary and secondary forests, cultivated lands and hilly tracts, pangolins prefer rock crevices and burrows, which they make in sheltered boulders. These burrows may be as deep as 6m. They are nocturnal, coming out during the night for feeding on eggs and adult termites and ants. It is reported from Kanyakumari district in Tamil Nadu that they also feed on the soft shelled land molluscs found in gardens and cultivated lands. It is not known how they feed on molluscs - they possibly break the shells with their strong nails as evident in the crumbled shells in their hide outs.

Known by various names such as *Bajrakit* (Sanskrit), *Banrui* (Bengal), *Sallu Samp* (Hindi) and *Enampeechi* (Malayalam), habitat loss and hunting for meat and scales are the major threats to the species. Traditional hunters such



as tribesmen use trained dogs to track and hunt them. Pangolin scales are extracted after killing and skinning the animal. Scales from one adult animal weigh an average of 1kg. Oil is extracted from the fat of the animal (amounting to 250 grammes per animal) for medicinal purposes. The brain of the animal is used by local medicine men. Local tribesmen eat also the flesh.

The scales of pangolin, the main part in trade, are found all over the body except the snout, chin, sides of face, throat, belly and inner surface of limbs, are two sided symmetrical elevations of the epidermis, which are constantly replaced on wear. The size of Indian Pangolin's scale may vary from 6.5 cm

- 7 cm (height) from the dorsal and tail region of the body, with an average breadth of 8.5 cm and weight of 7-10 gmms. The Indian pangolin may have about 160-200 scales all over its body, of which 40-46% is present on the tail. The Chinese Pangolin found in North East India is smaller in size when compared to the Indian pangolin.

Distribution and status

Pangolins have been reported to occur in the Indian sub-continent from eastern Pakistan, through much of India south of the Himalayas, Bangladesh and Sri Lanka. They may occur also in Myanmar and extreme western China.

Indian Pangolin
Manis crassicaudata
has 160-200 scales
all over its body.



WWF/Gerald Cubitt

But essentially no information is available on population levels of any of the pangolin species. In a CITES Management Authority document from 1986 pangolin populations are described to occur in India, with an indeterminate status. Further, it considers that the population have been greatly reduced by hunting.

Trade

Available data shows that the principal component of the Pangolin trade is exploitation for scales and meat for medicinal purposes. The trade pattern is such that it mostly goes undetected and therefore unrecorded. The reported international trade in its products generally involves two commodities - scales and skin. It is recorded that about 700 skins of Indian Pangolin were exported to the USA in 1983 compared to 5,023 skins between 1980-1982.

The price of one pangolin in the USA was about \$US6 and 1kg of scales is valued \$US18. The prices of scales vary from INR 250-500 per kg at the collection points; INR 500 - 1000 per kg at the main trading centers; and INR 900 - 1500 per kg at the border trading centres. The international market prices are reported to be INR 7000 - 8000 per kg.

The traders in all the states are mainly the tribal charmers. Generally they are the direct primary level sellers, though there is sometimes involvement of middlemen or agents. The tribal communities in the rural areas are directly involved in hunting while the middlemen or the agents usually buy the products from them. However, some agents were found to be hunters themselves.

Findings

The survey found that in East India a regular trade in pangolin scales take place in numerous weekly bazaars such as the Bundwan Choke and Kuilapal market in Purulia district of West Bengal. In Orissa such markets were

found in urban as well as rural areas, such as High Court market, Choudhary Bazar, and Nimchandi market in Cuttack, and Kiplipada, Udala and Nilgiri rural markets in Mayurbhanj and Baleswar districts. Puri, a popular pilgrimage town on the Orissa coast, is also known for the flourishing wildlife trade including Pangolin products.

On the other hand the interviews with villagers and forest officials confirmed that pangolin sightings are far apart and few, though tribal communities continue to track and trap them successfully to feed the markets. The Simlipal Tiger Reserve in Orissa was found to be the main supply source for markets in the region, in addition to the forests of Baripada, Hathgarh, Satkosia, Kuldihia and Sunabera. In West Bengal, supplies come from the hilly forests of Purulia and the adjoining forests of the state of Bihar (Dalma hills) and Orissa.

The survey also found that there are two types of end users. The first group consists of the general public, who purchase scales or the rings made from the scales, mainly for personal use, for example, to be used as charms or cures for haemorrhoids, rheumatism or labour pain. The other group consists of medicine men (locally called 'kaviraj') who purchase the scales, fat and brain of pangolins from their regular suppliers.

Unfortunately population numbers or population trends in the wild of the Pangolin species could not be determined. Of all the respondents from areas in West Bengal only five reported recent sightings. In the major rescue and rehabilitation centre in the state, Nandankanan Zoo in Bhubaneswar, Orissa, records mention only 12 Pangolin arrivals since 1990.

TRAFFIC India investigations from the North Eastern states of Manipur, Mizoram and Tripura indicate that Chinese Pangolin scales and meat are regularly collected from many different areas in the region (such as Assam, Nagaland, and Manipur) and traded in markets such as Imphal, Bishnupur and Moreh in Manipur. There are also

reports of supplies to Nepal via Dimapur in Nagaland.

Also the study found that there is a flourishing cross border trade on the Indo Myanmar border. A monthly trade estimate of 25-45 kg (3-4 animals make one kg) of scales in Manipur has been recorded, out of which about 80% is destined for Myanmar. There are collection agents all over the state, in the districts of Senapati, Tamenglong, Churhandrapur, Ukhrul and Chandel. Moreh (Manipur-India) And Tumu (Myanmar) are the notable, cross border trade centres.

Epilogue

This study encourages more research on the pangolin status in the region and recommends focussing the enforcement efforts on porous borders of Indo-Nepal and Indo-Myanmar. At the same time, the study acknowledges that lack of adequate information on the pangolin populations making the animal data deficient.

At the 11th meeting of the Conference of the Parties to CITES in April 2000, a proposal to transfer Asian Pangolins *Manis crassicaudata*, *M. pentadactyla* and *M. javanica* from Appendix II to Appendix I was put forward by India, Nepal, Sri Lanka and the USA. This proposal was rejected, despite the fact that the Parties acknowledged that Asian Pangolin populations are increasingly under threat due to domestic and international demand as well as habitat destruction.

TRAFFIC welcomed the decision and urged COP to direct the Animals Committee to complete its review of trade in specimens of these pangolin species. TRAFFIC also called for a suspension of international trade in pangolins, their parts and derivatives, until the status of the species has been assessed in all exporting range States.

For more information on the study contact TRAFFIC India. For contact details see page 16.

Significant progress made at COP11

The eleventh meeting of the Conference of the Parties (COP11) to the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) was held in Nairobi, Kenya in April 2000. With its 152 member states, COP11 proved once more to be a vital forum for international action to halt over-exploitation of valuable resources in wildlife trade.

Significant progress was made in controlling the elephant trade when a continued ban on the ivory trade and support for elephant trade monitoring systems was agreed upon. A deeper understanding of the illegal trade and killing of elephants ensured enough time for monitoring systems to become operational and deliver analytical results to the next CITES conference which will be held in the year 2002.

Other significant progress was made by addressing poaching of tigers and monitoring the illegal trade in tiger parts. Further, a resolution was adopted to tighten controls on the illegal trade in shahtoosh shawls made from the endangered Tibetan Antelope. Also a working group looking at trade controls in mahogany was revitalised.

Since some Parties felt that national legislation or regional agreements regarding fisheries are sufficient, some proposals, such as the whale shark, basking shark and great white shark, were rejected. This left these species at risk from unregulated unsustainable international trade. Further, a resolution aimed at clarifying trade controls for marine species taken on the high seas outside any national jurisdiction, termed in CITES as 'introduction from the sea', was defeated.

TRAFFIC recommends that plans for the future of CITES pay particular attention to the application of science, economics, law enforcement and awareness. In addition, CITES member countries should strive to harness greater finance to support national action and pay close attention to the wider conservation and trade agenda.

Full TRAFFIC report on COP11 will be published in TRAFFIC Bulletin Vol. 18 No.3 later this year.

Plant for a Healthy Future

The importance of traditional medicine can not be understated – especially in developing countries where traditional medical practitioners represent the first line of treatment for many maladies. In rural locations modern medicine, in contrast, is often difficult to acquire in rural locations, and beyond the economic reach of the majority of the ever-expanding population. These factors mean that the demand for medicinal plants far exceeds supply and many species are under threat of local extinction. This is especially true if there is a strong commercial element to be satisfied as in the case of *Prunus africana*.

In order to improve this situation, TRAFFIC East/Southern Africa (TESA) has initiated a self-help project to encourage traditional medical practitioners to grow indigenous plant species that are considered most important. This project has five components:

1. Identification of species that are considered threatened by use in traditional medicine. This includes discussions with traditional medical practitioners as well as reviewing academic studies undertaken on the subject.
2. Discovering the most effective means to propagate these species in tandem with the Kenya Forestry Research Institute and the International Centre For Research in Agroforestry.

3. Testing the propagation methods developed by IUCN in field situations.

4. Collation of the above information into a simple manual for use by the traditional medical practitioners.

5. Dissemination of the information to traditional medical practitioners, community and school groups as well as the voluntary sector.

Once the species have been identified and the methods refined, TESA plans to distribute "kits" providing starter materials for individuals and groups to propagate some of the species for themselves. Unfortunately, some of the medicinal species are extremely difficult to grow in basic situations. Thus, the nurseries at the Eastern Africa Regional Office of IUCN will act as a seedling centre for these species, which can then be collected and distributed.

Between raising awareness of the values of indigenous trees and propagating the most threatened species it is hoped that traditional medical practitioners, community and school groups can all "Plant for a healthy future".

This project is funded by the Rufford Foundation.



Traditional Medical Practitioners' stand at the Machakos Agricultural Show displaying a range of species of plants, and the medicines derived from these that are used in the treatment of patients.

South America:

A diverse continent of wildlife resources

The Challenge

For many centuries Latin America was conquered and colonised mainly for its mineral richness. The mentality of mineral extraction may have also triggered the continuing exploitation of natural resources in South America. No distinction was made between well sought-after metals and large amounts of wild resources, plants, and animals. In many cases they were used to total exhaustion.

Many of the products were and continue to be important to the economies of the region and to international markets. Oyster pearls, Brazilian wood, Caribbean mahogany, primates for pets and biomedical research, macaws and parrots, bird feathers, reptile skins and mammals skins for fashion, the sap of the rubber and quinine (the only antidote known against malaria for centuries) are just a few such products.

Today, the legal and illegal extraction of animals and plants from the wild continues to be driven by the demand of markets around the world. Human populations increase and the insatiable demands of the more developed countries and the élite of the developing countries keep the demand high. Thanks to a world of free trade and global economies, obstacles to sell anything anywhere - provided that there is someone willing to pay for it - are few.

The challenge for South America's new TRAFFIC regional office that was re-established in October 1999 is to generate positive changes in this

complex scenario - and in the context of a large, biologically and culturally diverse continent.

It is TRAFFIC's aim to provide guidance and recommendations from the perspective of one of the most serious problems that the conservation of biological biodiversity faces: the unsustainable extraction of species and its impact on the environment to feed the trade of fauna, flora and their products. The basis of TRAFFIC's work is objective information of high technical and scientific quality.

No single organisation alone can generate the urgent changes needed. Our work focuses on strategic liaisons with WWF, IUCN and key international, regional or national Institutions. Together we can combine efforts and contribute solutions to the problems faced by our societies. The loss of biological diversity, its productivity and continued existence need to be urgently addressed by us and future generations.

We are also part of a global network, offering analysis and alternatives from the perspectives of both producing and consumer countries that can help us find integrated solutions. The support for the correct implementation of CITES and other related agreements in the region is crucial in all our work.

We reaffirm our commitment with the Region in the search of a more just and sustainable world.

The Way Ahead

TRAFFIC South America has identified four approaches to guide its work within the region:

Identification of possibilities to introduce a wildlife in trade element to focused projects of priority ecoregions and species issues under the WWF umbrella in the region.

Increased involvement in CITES implementation work in the region in fields such as timber, fisheries and enforcement, where TRAFFIC can help to make a difference.

Co-operation with governments in the region through clearly identified sets of issues where TRAFFIC's input has been and will be welcomed.

Improvement of TRAFFIC's own knowledge and appreciation of the most urgent needs where TRAFFIC's input can help conservation of biodiversity in South America.

These approaches will help TRAFFIC South America frame the most realistic and effective programme for the region. TRAFFIC's aim is to be recognized by the conservation and wildlife trade community in its region as a reliable, objective source of information and advice, known for the quality and timeliness of its products. Databases on species in trade, infractions, and trade levels will also be part of the expertise in wildlife trade issues provided by TRAFFIC.

As part of a worldwide network, TRAFFIC South America staff work to better ensure that trade in wild plants and animals is not a threat to the conservation of nature.

In photo from left:
Anita Sancho, Bernardo Ortiz and Ximena Buitrón.



TRAFFIC South America

Sea cucumbers in Galapagos Islands

During 1999 an experimental season of sea cucumber *Isostichopus fuscus* fishery was opened in the Galapagos Islands. During this period over 4.4 million sea cucumbers were harvested. The majority of them were destined to Taiwan and Hong Kong, with small amounts sent to the markets of USA and Singapore.

The trial period was supervised by the Directorate of Protected Areas of Galapagos as well as supported by studies before and after the season in order to determine the impact of the harvest on the populations of *I. fuscus*. In this context TRAFFIC presented a report 'The Galapagos Sea Cucumber Trade during 1999' to the Minister of the Environment of Ecuador (to be published in the near future). The report concludes that sea cucumber fishery should be halted until it is certain that this endangered resource is recovering successfully.

However, due to pressure imposed by the fishermen, the authorities included the fishery of *I. fuscus* in the annual fishing calendar for year 2000. A new fishing period was established with a quota of two million sea cucumbers. The fishermen did not accept the offer and requested an increase of the quota and the establishment of an official minimum price per sea cucumber.

After negotiations a new quota of four and a half millions sea cucumbers was set, with a two month fishing season and a fixed price of US\$2 per

unit. A few days prior the start of the fishing season, the fishermen requested a new increase of the quota. To create pressure on the authorities, they "kidnapped" juvenile giant tortoises from the breeding centre at Isabela Island and occupied the installations of the National Park. Fishermen had used these kind of tactics successfully in the past to meet their demands.

The authorities fixed a new date to open the fishing season and fishermen had to concede and accept the previously agreed quota. The sea cucumber fishery for year 2000 began on 22nd May.

TRAFFIC has expressed its support to the Ministry of Environment in enforcing the law, rejecting all radical positions by the fishermen that imply blackmail, lack of respect towards previous agreements and disregard of the integrity of the Galapagos ecosystem and the resources. The management authorities are urged to make all parties respect the established fishing quotas and to exercise the corresponding control. The appropriate sanctions need to be applied to those who have fished and stocked sea cucumbers outside the fishing season.

In recent dialogues with the fishing sector of the archipelago and with the authorities, TRAFFIC was requested to continue with investigations providing recommendations related to the processing and presentation of the product, as well as trends in the international market.



TRAFFIC South America

The Galapagos is home to some 14 species of sea cucumbers - relatives of the starfish - but only *Isostichopus fuscus* is heavily exploited.

Sea cucumber fishers started targetting the Galapagos Islands in 1992 following exhaustion of the supply from the coast of mainland Ecuador.



TRAFFIC South America

Larger environmental programme underway for the Galapagos Islands

The Ecuadorian government together with the Interamerican Development Bank (IDB) is preparing a conservation programme for the Galapagos Islands. The programme aims to promote efficient use of natural resources and conservation of the environment in the archipelago.

As soon as the agreement between government and IDB has been finalised, TRAFFIC South America will undertake the evaluation of trade in marine resources in the Galapagos region. This work supports the Directorate of Protected Areas of Galapagos (DAPG) in its efforts to better manage fishery-related issues in the region. The activities are envisaged to start in the year 2001.



Jonathan Green

Sea cucumbers are marine animals that range in size from two centimeters to two meters and move by means of many small feet. They are regarded as a delicacy, tonic food and occasionally used in medicines.

Medicinal plants in trade

Ximena Buitron / TRAFFIC



Trading medicinal plants at a market place in Quito, Ecuador.

Leaves and bark of *Tabebuia impetiginosa* are used for medicinal purposes.



S.R. SILVA

Medicinal plants as well as their derivative products, such as potions, pills and creams, are sold daily in the local markets throughout South America and traded internationally. There is evidence that the volume of medicinal plants traded is considerable and that net sales exceed millions of dollars annually.

To a great extent the plants are harvested from the wild and come from Coastal, Andean and Amazonian regions. In some cases they are well known species, that have been known since the colonial era, such as the Quinine and the Sarsaparilla. In other cases, such as Ayahuasca, they were known for long time only by indigenous communities but recently have been studied and used also by larger communities.

South America supplies raw material used for the production of many medicines aimed at relieving or curing illnesses, from various aches and infections to cancer. For example native plants like Boldo, Dragon's blood, Cat's claw and Ipecac are used for these purposes. The region also consumes vast amounts of products containing medicinal plants, such as Gingseng, that are produced overseas and then imported to the region.

The use of traditional medicine is increasing steadily. The reliance on natural medicinal resources is due to cultural preferences as well as the high cost and inaccessibility of modern medicine. The increasing wild harvest and current trade patterns of these resources can create a negative impact that threatens not only the sustainability of the species but also the health of the population.

Better use and management of the trade in medicinal plants is the key challenge – not only in South America

but worldwide.

In order to address this enormous challenge, TRAFFIC South America aims to enhance the body of information on these resources and to better understand harvest and trade patterns, as well as the existing and proposed trade legislation in the region and recommendations for future developments.

Various activities by TRAFFIC have recently been undertaken, are ongoing or planned to take place in the near future:

- Medicinal plant studies on harvest, use and trade in Bolivia, Brazil, Colombia, Ecuador, Peru and Venezuela.
- Workshops organised by TRAFFIC on medicinal plants and trade, with the participation of not only the scientific experts but also indigenous and local communities, traders and private companies as well as the governmental sector.
- Interaction with various technical networks such as RIPROFITO (Iberoamerican Network of Phytopharmaceutical Products), CYTED (Science and Technology for Iberoamerican Development) and GICPLAM (Iberoamerican group for the just Commercialisation of Medicinal Plants) as well as with private groups related to trade and health, universities and herbaria, and environment and health NGO's.
- Participation in various conferences and other events, such as the upcoming International Fair on Natural Health, EXPONAT 2000, to be held in Colombia in September 2000.

Toothfish study in Chile

In November 1999 TRAFFIC South America commenced research on the status of the trade in Patagonian toothfish *Dissostichus eleginoides* in Chile, as part of a larger study carried out by the TRAFFIC Network investigating the global trade of both Patagonian and Antarctic Toothfish.

Toothfish is a very important resource for the fishing industry in Chile, as it generates a considerable amount of direct and indirect employment and creates incomes of US\$ 90 million per year to the country.

The fishery for toothfish in Chile began in the early 1970s and has expanded across to the northern and southern borders of the country. Toothfish is exported as frozen HG (headed and gutted) and as iced fillets to some twenty countries worldwide. The main export markets are Japan and the United States.

Chile has a Fishery Development Regime, which requires regular stock evaluation and management regulations. Chile also complies with the regulations of Convention on the Conservation of Atlantic Marine Living Resources (CCAMLR).

Chile is also one of the few countries that has historical detailed information on statistics and biology of the resource.

Patagonian toothfish *Dissostichus eleginoides*



TRAFFIC

Mahogany *Swietenia macrophylla*

Big leafed Mahogany *Swietenia macrophylla* continues to be one of the most exploited and exported tree species in South America. Its great demand and value on international markets has made it by far the most profitable wildlife timber species to Bolivia, Brazil and Peru. The USA is still the largest importer of mahogany followed by the Dominican Republic. In South America only Brazil is known to have a considerable local market.

There are indications of a decrease in exports from Brazil and Bolivia. This is partly due to increase of control measures but also because of exhaustion of the resource. The market is growing constantly, and the demand continues to be supplied by wild mahogany, especially at the time when the mahogany plantations in the region are still in their early days.

Swietenia macrophylla trade reflects to a great extent market patterns and the systems of extraction, exportation and control of valuable timber in general. The findings by TRAFFIC carried out in two separate studies in South America illustrate the problem of forestry and forest management in the region. Both '*Legislation and extraction controls and trade of mahogany in Bolivia,*

Brazil and Peru' and '*Mahogany Markets and trade: obstacles and opportunities*', provide a better insight to the diverse factors that threaten the species and/or impede adequate management. The reports will be released in the near future.

Mahogany and CITES: Next Steps

To date Costa Rica, Bolivia, Brazil and Mexico have included mahogany populations in Appendix III of CITES.

The re-establishment of a Working Group on Mahogany at CITES COP11 in April 2000 prompted new challenges to the work with this species in a more participative and integrated manner. TRAFFIC is preparing a publication that will include information on the monitoring of implementation of Appendix III listing up to 1999. In addition, dialogue and exchange of information in the region continue between TRAFFIC and CITES authorities, with the support of WWF and IUCN, to ensure better implementation of CITES.



Margaret Stern

Big leafed Mahogany *Swietenia macrophylla* being stored and processed at Espinoza Sawmill in Maldonado, Madre de Dios, Peru.



Margaret Stern

Recent publications

Ecuador: Use and trade of medicinal plants, current situation and important facts for its conservation (in Spanish). Ximena Buitrón, July 1999.

Ecuador: Use and trade of medicinal plants, current situation and important facts for its conservation. Proceedings of the Workshop 1-3 September, 1999, Quito, Ecuador (in Spanish). Ximena Buitrón, December 1999.

Publications under preparation

Legislation and extraction controls and trade of mahogany (Swietenia macrophylla) in Bolivia, Brazil and Peru.

Mahogany Markets and trade: obstacles and opportunities.

Medicinal Plants of Brazil: legislation and trade.

*Evaluation of trade of sea cucumbers *Isostichopus fuscus* in Galapagos Islands during 1999.*

TRAFFIC South America is part of the worldwide TRAFFIC Network which has offices in 21 countries. TRAFFIC is a joint programme of WWF - World Wide Fund For Nature and IUCN - The World Conservation Union and it works in co-operation with the CITES Secretariat. TRAFFIC aims to ensure that trade in wild plants and animals is not a threat to the conservation of nature.

TRAFFIC
— SOUTH AMERICA —



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TRAFFIC study offers insight into illegal TCM trade in Europe

by Stephanie Theile, Research Officer, TRAFFIC Europe

From November 1999 to March 2000 TRAFFIC Europe conducted surveys on the availability of Traditional Chinese Medicines (TCM) purported to contain species regulated by CITES. This study documented the range and legality of TCM products offered in five West European countries (Belgium, France, Germany, the Netherlands and the United Kingdom) and investigated the types of products most commonly on sale. Because TRAFFIC Europe undertook a similar survey in 1995, possible market shifts during recent years could be assessed. In parallel with these TCM surveys, TRAFFIC Europe-Germany studied the TCM user communities in Germany (see *TRAFFIC Bulletin Vol. 18 No. 2*).

The surveys showed that TCM products purporting to contain CITES-listed species were available in all of the five countries surveyed. 31% of the 149 sites that were visited offered TCM products claiming to contain ingredients of species such as Tiger *Panthera tigris*, Musk Deer *Moschus spp.*, Wild Ass *Equus spp.*, Saiga Antelope *Saiga tatarica*, American Ginseng *Panax quinquefolius*, Costus root *Saussurea costus* and several species of Orchids. Musk deer products such as anti-rheumatic plasters and pills claiming to contain Costus root were among the products that were most commonly found on sale.

The findings of this study were made available to national enforcement agencies in all five countries, leading to a number of significant seizures of illegal TCM.

'Musk & Tianwang Analgesic Plaster' containing leopard bone liquid and musk extract was seized from UK-based premises.



The Dutch Investigation Service (AID), for example, seized several thousands illegal TCM products since the beginning of this year. TRAFFIC Europe's information led to one of the largest seizures ever of Musk & Tiger Bone Plasters in Europe, when in April 2000 the Federal Police of Brussels confiscated more than 6.000 plasters from a single shop in Brussels.

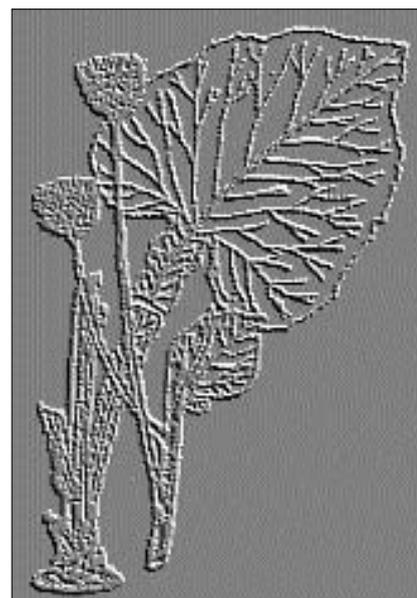
The study also revealed relatively low awareness among retailers and traders of the EU laws and regulations governing the trade in certain TCM products. As a follow-up activity, TRAFFIC Europe will commence outreach and awareness work towards the TCM communities in Western Europe. For example, TRAFFIC Europe is participating in information seminars organised by the Dutch AID, and aimed at retailers and traders of TCM in the Netherlands. In addition, TRAFFIC Europe-Germany plans to produce a leaflet for TCM practitioners that apply to the trade also listing the most commonly used animal and plant species in TCM as well as TCM products that contain regulated ingredients.

UK focuses in raising awareness on lesser known species used in TCM

As part of the European study seven cities in the United Kingdom were visited and a total of 41 premises surveyed. It was found that over half of the premises sold traditional Chinese medicines. Included in this survey were Chinese supermarkets, pharmacies, clinics and doctors surgeries.

Of the 22 premises that stocked TCM, 14 (64%) were selling TCM that claimed to contain EU Wildlife Trade Regulation Annex A protected species, either in patent medicines or as raw ingredients. These species include Costus root, Leopard, Bear and Musk. Precise species in many cases remained unknown.

Costus root was the most prevalent species to be found, and in its raw state



CITES Appendix I-listed *Costus root Saussurea costus* is one of the most common species found on sale in the countries surveyed. It is said to act on the spleen and large intestine. It helps to ease abdominal pain and heighten body awareness and sensitivity. It is also used to treat asthma, bronchitis and cancer among other illnesses.

was available in all 14 premises that sold TCM claiming to contain protected species.

Over three-quarters of the practitioners questioned were aware that the sale of tiger and rhino and their products was illegal. However, outside of these two high profile species, their awareness was low. Efforts within the UK will now be focused on raising awareness of these lesser known species within the TCM community, as has been done for the tiger and rhino in the past.

-Stephanie Pendry, TRAFFIC International

This study was supported by WWF-Netherlands and WWF-UK.

TRAFFIC analyses wildlife trade dynamics in Vietnam

by James Compton*, National Representative, TRAFFIC Southeast Asia-Vietnam

Surveys conducted in Indochina over the past decade have shown that Vietnam plays three overlapping roles in the wildlife trade: as a conduit for wildlife sourced in surrounding countries, particularly Vietnam, Lao PDR and Cambodia en route to more lucrative markets; as a consumer; and as a source country in its own right.

Vietnam has a long border with its western neighbours, and a protected area network has been set up in an attempt to safeguard Vietnam's remaining forested wilderness. One of the most important areas for endemic flora and fauna is the ecoregion known as the Northern Annamites, where attempts have been made by WWF and other conservation programmes to link areas of contiguous habitat in Vietnam and Lao PDR.

As part of the protected area system, the Pu Mat Nature Reserve (PMNR) was established in Nghe An

province in 1995, encompassing an area of 91,113 hectares across tropical and sub-tropical evergreen forest – including the largest tract of primary lowland tropical forest left in Vietnam.

PMNR lies between two important road conduits for trade between Lao PDR and Vietnam, Route 7 and Route 8. More importantly, it is surrounded by a bufferzone of 86,000ha, populated by 50,000 people who rely on exploiting forest products as part of their livelihoods.

Following an initial phase of biodiversity assessment conducted by

the Social Forestry and Nature Conservation project (SFNC) which began in 1997, TRAFFIC Southeast Asia-Vietnam office was contracted to assess the wildlife trade dynamics that operate around the nature reserve area.

A three-month survey was conducted between August and November 1999 by a four-person survey team who looked at key villages within the buffer zone, interactions with middlemen and traders, and how cross-border trade from Lao PDR plays a part in supply and demand.

The team found that – as with much of the trade through Vietnam – reptiles made up the largest proportion of observable trade, in this case 40%. Observed reptile species in trade included species listed on CITES Appendix II such as Impressed Tortoise *Manouria impressa*, Indian Cobra *Naja naja*, King Cobra *Ophiophagus hannah*, Common Rat Snake *Ptyas mucosus* and Burmese Python *Python molurus*.

Indochinese Box Turtle *Cuora galbinifrons* (recently listed on CITES App II at CITES COP11) made up 41% of all turtles observed in trade, while *Cuora trifasciata* (also now in CITES App II) was reported to fetch up to VND18 million (US\$1286) per kilogramme.

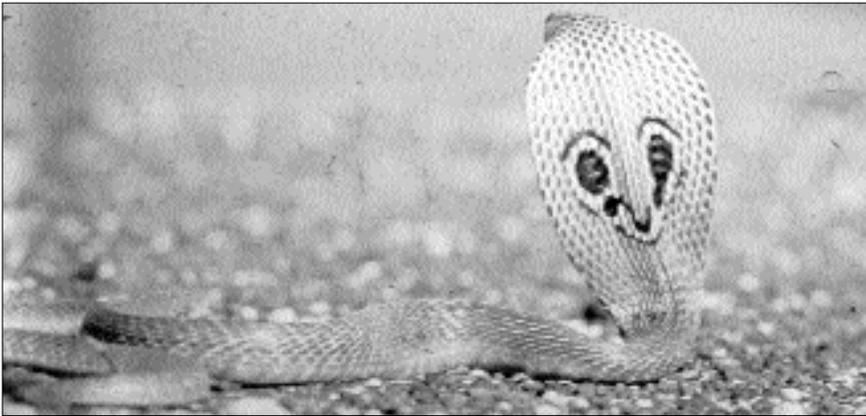
Live individuals and parts of mammal species comprised 18% of the total observable trade, including the following CITES listed species: Tiger *Panthera tigris*; Sun Bear *Ursus malayanus*; Asiatic Black Bear *Ursus thibetanus*; Clouded Leopard *Neofelis nebulosa*; Eurasian Otter *Lutra lutra*; Gaur *Bos gaurus*, Pangolin *Manis* sp. and Serow *Capricornis sumatraensis*.

These species are utilised as bushmeat by local people and sold-on to wildlife restaurants along Route 7, adjacent to the buffer zone of the park.



WWF/Gerald Cubitt

Young Serow
*Capricornis
sumatraensis*



WWF / Ron Whittaker

They are also used as medicinal ingredients or as decorations and pets.

Three main source areas were identified: the PMNR itself, areas in Nghe An province outside the protected area, and Lao PDR. Traders estimated that 40% of the bear trade and 90% of the pangolin trade originated in Lao PDR. If the animals were not consumed in the districts surrounding the PMNR, they were most likely to be transported north to Hanoi, possibly going further north across the border into China.

The TRAFFIC survey discovered that trade in Indian Cobra and King Cobra peaks between November and January each year, targeted to supply Chinese traders during a specific 10-day period when they extract the venom for supplying the TCM market.

Prior to the commencement of the larger SFNC project (ECU 22 million over six years, funded by the European Community) baseline socio-economic analysis indicated an income gap of US\$1million between what village communities in the PMNR buffer zone can produce from agricultural activities and what the population needs to survive. Harvesting and exploitation of wildlife and other forest products is believed to play a major role in making up this shortfall.

TRAFFIC's involvement in this project has provided a localised counterpoint to working at the national level with the CITES Authorities of Vietnam. By analysing the wildlife trade dynamics around a source area such as the PMNR, TRAFFIC has compiled insights on several levels:

- Traded species profiles, uses of wildlife products and current market prices;
- The need to strictly police protected areas as sanctuaries for

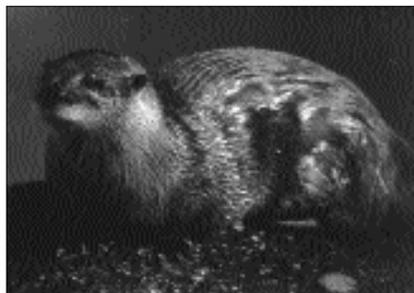
Vietnam's wildlife;

- Reliance of rural communities on forest resources, and therefore the need to conserve these resources;
- Role of Lao PDR as an additional source area for the trade; and
- How enforcement strategies could be improved.

The results of this survey will be taken forward by the SFNC project in the near term. TSEA-VN will also be using the report as an advocacy tool with the Vietnamese authorities at central and provincial levels, aiming to catalyse a more coherent approach to regulating wildlife trade relative to the needs of the rural poor who depend on the forest for their livelihoods.

** Currently James Compton is working in TRAFFIC Oceania office as a Senior Programme Officer.*

Top photo: Indian Cobra *Naja naja*
Below: Eurasian Otter *Lutra lutra*;
Gaur *Bos gaurus*.



WWF / Henry Ausloos



WWF / Mandai Ranjit

Symposium on Medicinal Utilisation of Wild Species

This year's World Exposition, EXPO 2000, with its overall theme 'Humankind - Nature - Technology' will last from 1st June until 31st October.

Within a series of fora presented by the World Wide Fund for Nature (WWF)-Germany, WWF and TRAFFIC would like to announce a one-day symposium:

'Medicinal Utilisation of Wild Species - A Global Conservation Challenge in the New Millennium'

on October 13th, 2000 at the Nord/LB-Forum, EXPO 2000, Hannover, Germany.

Scope:

80 per cent of the world's population relies on plant and animal-based medicines for their primary health care needs. Rising demand for wildlife medicinals has led to increased rates of over-exploitation in many regions of the world. Encouraging the sustainable use of medicinals from the wild is crucial to maintain both biodiversity and health requirements for future generations.

Aim:

Decision-makers and experts in the fields of health-politics, conservation, development co-operation, pharmaceutical industry and traditional medicines are invited to develop strategies for a more effective management of species used for medicinal purposes. Speakers will include international representatives from the political, conservation and health care sector.

Among the invited key note speakers are Prof. Klaus Töpfer, Executive Director of the UN Environmental Programme, Dr. Gro Harlem Brundtland, Director General of the World Health Organisation (WHO) and Maritta Koch Weser, Director General of the World Conservation Union (IUCN), as well as the German Ministries for Health and Development Cooperation.

Symposium languages will be English and German.

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much cheaper than domestic meat. For example, in Zimbabwe bush meat is 75% cheaper than domestic meat and in Botswana it is 30% cheaper. The study also found that the poorer the household, the greater its reliance on bush meat seems to be.

During times of economic hardship, droughts and famine, bush meat is relied upon to an even greater extent. Peak hunting periods coincide with dry season drought months, as vegetation is less dense and wildlife searching for watering holes are easier to locate and hunt. Hence, supply peaks during times of hardship, and constitutes an important drought and famine coping strategy for the majority in the rural areas surveyed.

Legal game meat production

All the countries surveyed legally produce game meat through ranching, farming, cropping/culling, licensed hunting or problem animal control initiatives. Such schemes collectively yield about 8,500 metric tonnes (mt) of meat annually, with an estimated local

value of nearly \$US 7.7 million.

Game meat production in Zimbabwe (2,925 mt per year) represents a substantial and growing industry. It is economically more favourable compared with other land uses such as farming and livestock ranching in semi-arid areas. This is due, in part, to the ability of wildlife to adapt to harsh conditions, and the versatile options wildlife offer in terms of photographic tourism, trophy hunting, and hide and meat production.

However, the study found that the other countries surveyed have a negligible game ranching, farming and cropping sector due to unfavourable wildlife ownership and land tenure laws. In these countries, wildlife is government-owned with only limited and, in many cases, short-term user rights given to landholders. When a continuing uncertainty about the retention of wildlife user rights persists, landholders remain reluctant to invest in costly start-up infrastructure.

Game meat also results as a by-product from licensed hunting. All the countries surveyed have legislation allowing low-cost licensed hunting by

citizens. However, due to the subsidised cost of licenses, licensed citizen hunting can be open to misuse.

For example, in Tanzania the cost of a citizen license to hunt a Cape Buffalo is USD 10. By comparison, the animal's meat is valued at USD 211 and its value as a safari hunting trophy is USD 800. Hence, the high-value of bush meat can result in many citizen hunters, literally, over-shooting their license quotas for commercial gain.

Bush meat trade

In many rural survey areas, hunters whose primary objective is still to provide meat to their families, conduct



Wildlife trader with dik dik *Ryncho-tragus kirki* meat in Maputo, Mozambique.

IUCN Mozambique

A landmark tuna agreement underway

Since June 1997 the coastal states, territories and states fishing in the area of the western and central Pacific Ocean have been negotiating a new fisheries arrangement under the United Nations Fish Stocks Agreement¹. Called the 'Multilateral High Level Conference (MHLC) process', the resulting arrangement will be the first to be concluded under the UN Agreement.

The fishery for highly migratory fish stocks in the western and central Pacific is based on four tuna stocks; skipjack, yellowfin, bigeye and South Pacific albacore. The largest tuna fishery in the world, it is worth around US\$1.7 billion per annum. The geo-political nature of the western and central Pacific distinguishes it from other major tuna fisheries, with around 70% of the total catch taken in the exclusive economic zones of Pacific island countries and territories. This, combined with the high economic reliance by many Pacific island countries on the fishery, makes these negotiations very sensitive.

Not unexpectedly, the issues that have polarised participants mirror those that have plagued other international

fisheries organisations; among others decision-making processes and basis for future fishing entitlements.

TRAFFIC Oceania continues to work with other environmental NGOs, as well as in co-operation with the Australian government, to ensure that any decisions made do not undermine the effectiveness of the arrangement in support of effective conservation and management.

At present, only two countries have had environmental NGO delegates – Australia and the US. TRAFFIC Oceania is the only NGO on the Australian delegation and has been liaising closely with the NGOs represented on the US delegation, including through the tabling of a joint statement on transparency provisions for observers at the last session of the MHLC.

Negotiations are pursued to be concluded by the end of summer 2000.

- Anna Willock, Senior Fisheries Adviser
TRAFFIC Oceania

¹ The UN Fish Stocks Agreement was adopted in 1995 and requires 30 ratifications to bring it into force. There are currently 26 ratifications and it is expected to come into force later this year.

continued from page 3

The study also showed that enforcement and market surveys that are carried out sporadically by both, the enforcement authorities and the insect fair hosts, are far from satisfactory. The conservation status of certain non-migrant, resident insect species with low population densities and restricted range (eg., *Atrophaneura jophon*, a Sri Lankan Papilionid butterfly and *Colophon primosi*, a South African Lucanid beetle) seems to remain under threat by commercial collecting and trade.

The report urges that all the specific butterfly and beetle species threatened by trade should be considered for trade restrictions under the EU-Wildlife Trade Regulation and possibly also under CITES. The report also calls upon entomological associations to explore the possibilities of self-regulation and co-operation in trade-related activities.

For full recommendations and report (in German) contact TRAFFIC Europe-Germany. For contact details see page 16.

the majority of trade. In Kitui District and the Loikas area of Kenya, and the Kilimanjaro region of Tanzania, many hunters, who are primarily subsistence farmers, sell only excess bush meat after their families have been satisfied.

Full-time commercial traders also exist in most of the survey areas. Such traders sell larger quantities of meat and, in many cases, identify more lucrative markets outside the local supply area.

In Kitui District, Kenya, a range of more commercially orientated trade outlets such as open air markets, illegal brew bars, and butchery kiosks are used to trade bush meat.

In the western Serengeti of

Tanzania, 34% of traders rely on bush meat as their sole source of income, and have identified markets as far as 200 km away on the more densely populated Kenyan border.

However, most trade in rural areas still occurs locally. Trading mechanisms vary, with house to house sales and contracts between hunters and consumers or traders being successful due to their relative secrecy.

Rights for landholders

This study recommends that wildlife ownership be more widely transferred to landholders and secure land tenure needs to be formalised in

legislation. This would prompt an interest among landowners and holders to invest in the sustainable management of the wildlife resource for meat production.

Once benefits increase to landholders, wildlife can play an important sustainable role in community development and, by doing so, ensure its continued survival. Without it, wildlife will continue to be seen as a freely exploitable, uncared-for resource, that benefits only those who use it first.

Without a dynamic and proactive response to the bush meat issue in the region, it is likely that the countries of this study will lose not only a valued natural resource, but also a vital community development option.

The study urges for a more equitable distribution of donor funding to this critical conservation and social issue, with greater collaboration between the conservation and community development government departments, NGOs and professionals.

This study was funded by the European Union.

For more information and full report contact TRAFFIC East/Southern Africa - Kenya office, Senior Programme Officer Rob Barnett. For contact details see page 16.

Longline snares, used for capturing antilopes and buffalo, seized from poachers by Wildlife Division, Tanzania.



Freidkin Conservation Trust

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WWF Germany
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WWF International
WWF Italy
WWF Japan
WWF Large Herbivore Initiative for Europe
WWF Latin America-Caribbean Programme
WWF Netherlands
WWF New Zealand
WWF South Africa
WWF Sweden
WWF Switzerland
WWF Tanzania Programme Office
WWF Tiger Conservation Programme
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