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TRADE MEASURES - TOOLS TO PROMOTE THE SUSTAINABLE USE OF NWFP?

AN ASSESSMENT OF TRADE RELATED INSTRUMENTS
INFLUENCING THE INTERNATIONAL TRADE IN
NON-WOOD FOREST PRODUCTS AND ASSOCIATED
MANAGEMENT AND LIVELIHOOD STRATEGIES



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EXECUTIVE SUMMARY

Non-wood forests products (NWFP) have an important role to play in the livelihoods of many rural communities, particularly in developing countries, where they provide a broad range of subsistence and commercial livelihood opportunities. While much of the trade is domestic, for some NWFP species and products, the international trade is significant and generates income for the resource harvesters and collectors as well as many other actors in the commodity chain. The dearth of information on the trade in wild plants and animals makes it difficult to estimate total and relative levels of use for both domestic and commercial purposes, and this is complicated by the difficulty in distinguishing between subsistence use and trade for commercial purposes. The value of international trade, for which data is comparatively better, has recently been estimated at US\$11 billion per annum.

Effective NWFP trade faces practical challenges as NWFP are often small in size, come from many different sites and a far bigger range of species and products exists than for the two key traded resources – timber and fisheries. NWFP trade is, accordingly, far more complex and difficult to understand and regulate, as NWFP can not be successfully regulated as a uniform commodity.

The international trade in NWFP is regulated through a broad range of trade-related instruments. Some of these, such as the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) and certain national species conservation measures have their basis in the conservation of biodiversity, while others, such as import tariffs or phytosanitary certificates are used for capturing revenue, or for food health and quality control. There are also many trade-related instruments such as trade rules within the World Trade Organisation (WTO) that are based on enhancing trade liberalization, covering a broad range of products in international trade. For these instruments NWFP are not the key commodities being targeted and the impacts are not always supportive of sustainable use and trade.

NWFP trade is also affected by voluntary trade measures developed by the private sector, such as certification and eco-labeling schemes, that generally aim to achieve the dual aim of biodiversity conservation and the equitable distribution of benefits to the communities for whom such trade plays a key livelihood role.

Trade-related instruments, such as CITES, that aim to ensure biodiversity conservation do not always achieve this goal and in certain cases, have had a negative impact both on the species concerned as well as those whose livelihoods are linked to the trade. There are, however, a number of examples of win-win situations and there is increased recognition within the biodiversity conservation sector of the need to incorporate the determination of livelihood impacts into decision-making processes for the regulation of trade in wild plants and animals.

Tariffs are used by both importing and exporting countries as a means of generating revenue and, normally in the case of developing countries, as a protectionist measure. Excessive tax rates can be counter-productive as they may encourage illegal trade in the products in order to avoid the tariff. This situation often results in a lower price being paid to collectors and harvesters.

While tariff-based trade measures can have an impact on the trade in NWFP, the impact of non-tariff measures is probably greater. For instance, phytosanitary controls can become a trade constraint where they cause delays and they are normally more onerous on small cooperatives and local communities who may lack the resources to meet the required standards. Non-tariff import controls can prove restrictive as well as complex and overlapping, creating unnecessary burdens on both enforcement personnel and traders. Further, such a regulatory environment is frequently more open to exploitation.

Certification and labeling schemes have focused mainly on timber products, and the certification of NWFP has only been available in forest-related certification schemes for the last half-decade. Because of this, it is difficult to assess the performance of certification for NWFP as there are insufficient case studies and sources of information available. In general, NWFP are not considered ideal for certification programmes as the products are generally traded on a small scale in local markets and where they are traded internationally, it is frequently for a specific industry and on a relatively small scale. Therefore, only some of the more popular products are considered suitable for certification and related initiatives should be carried out on a case by case basis.

There are a number of areas where inadequate research has been carried out and inadequate literature exists to determine the impact of the trade-related measures. These include international and regional trade agreements, regional and bi-lateral biodiversity-related agreements, as well as tariff and non-tariff measures. In the latter case, the existing literature needs to be updated.

It is clear that NWFP play a critical role in the lives of millions of people around the world and that trade-related instruments do have an impact, both positive and negative, on the sustainable use and conservation of the forests producing NWFP and the livelihoods of those dependant on them. Resource users, regulators, non-governmental organizations, policy-makers and all other stakeholders accordingly need to continue emphasizing the important role of NWFP and advocating for the adoption of trade-related measures that are supportive of their conservation and sustainable use.

1. INTRODUCTION

Most rural livelihoods in developing countries depend to a large extent on the use and sometimes the trade of biodiversity-related products (Bennett and Robinson, 2000). While the commercial trade in wild plants and animals is mostly domestic, for certain such species and products, including non-wood forest products (NWFP), a significant segment of products traded are ultimately destined for foreign markets and the general direction of trade flows is from developing to developed countries (Burgener, 2003)

The past thirty years have witnessed a significant growth in domestic and international trade in practically all products, including NWFP. This growth has had accompanying implications, both positive and negative, for the species concerned as well as the numerous individuals operating within the commodity chains of these NWFP. Accordingly, various instruments have been developed and implemented in attempts to regulate the trade, normally with the intention of ensuring sustainable trade and/or the equitable distribution of the benefits of such trade. These instruments range from multilateral environmental agreements such as the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) and the Convention on Biological Diversity (CBD) to regional trade and other agreements to national level controls and to voluntary instruments such as eco-labeling and certification schemes. There are also many trade-related instruments whose primary focus has not been on NWFP and those involved in their harvest and trade, but which have impacted on this trade.

An FAO study in 1993 provided an overview of the international trade in non-wood forest products. This was followed in 1994 by a report focusing on trade restrictions affecting the international trade in NWFP.

In 2001, the Government of Japan and the Food and Agriculture Organization of the United Nations (FAO), in close cooperation with the International Tropical Timber Organization (ITTO), implemented a research and analysis project entitled "Impact Assessment of Forest Products Trade in the Promotion of Sustainable Forest Management". This project undertook a broad analysis of the impact and interactions between trade in forest products and services and forest management. The project aimed to provide information, analysis and a platform for informal debate in order to assist governmental institutions, international organizations, the private sector and civil society groups such as NGOs in the elaboration of trade policies that encourage sustainable forest management (Anon., 2005a). The project incorporated some analysis of trade-related instruments, in particular trade restrictions on forest-based goods and services. The focus was, however, very much on forests and timber and did not cover NWFP trade in any detail.

This analysis accordingly follows on from and expands upon trade-related instruments that impact on the trade in NWFP, with an emphasis on those instruments that promote the contribution of trade to the sustainable use of forest products and/or to people's livelihoods.

While analysis of the domestic trade in NWFP has not been completely excluded from this analysis, the emphasis is on the international trade in NWFP.

³ Iqbal, M. (1993). *International trade in non-wood forest products: an overview*. FO: Misc/93/11 Working Paper. FAO. Rome, Italy

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2. METHODOLOGY

Following initial discussions on the ambit and objectives of the analysis, an extensive literature search was undertaken towards clarifying the scope of the term ‘trade-related instruments’ within the context and objectives of the Norway Partnership Programme ‘*Forests for Sustainable Livelihoods*’. A list of ‘potential policy areas to explore’ (Annex A) was used in determining which measures would fall within the scope of the analysis. Following this, literature on trade-related instruments was sourced and analysed and where required, clarification sought from relevant experts and the authors of cited literature.

Two country case studies – in Cameroon and Bolivia - were carried out and the results analysed and incorporated into the analysis. Case studies were carried out at a national level to provide a more comprehensive understanding of the impacts of trade-related measures for specific NWFP. For each country case study, two NWFP were chosen for analysis, based on their potential to contribute to the global analysis. The full case studies are appended to this report as Annexes B and C.

Non-Wood Forest Products – a Definition

For the purposes of this paper the following definition of NWFP has been used⁵:

‘Non-wood forest products consist of goods of biological origin other than wood, derived from forests, other wooded land and trees outside forests’.

According to this definition, the three components of the term "non-wood forest products" are interpreted as follows:

- **Non-wood:** The term NWFP excludes all woody raw materials. Consequently, timber, chips, charcoal and fuelwood, as well as small woods such as tools, household equipment and carvings, are excluded. Non-timber forest products (NTFP), in contrast, generally include fuelwood and small woods. This is the main difference between the terms NWFP and NTFPs.
- **Forest:** NWFP should be derived from forests and similar land uses. Since plantations are included in the FAO definition of forest, NWFP that are obtained from plantations, such as gum arabic *Acacia senegal* or rubber *Hevea brasiliensis*, are thus included in the definition of NWFP. Many NWFP are derived from both natural forests and plantations.
- **Products:** The term "product" corresponds to goods that are tangible and physical objects of biological origin such as plants, animals and their products. Forest services (e.g. ecotourism, grazing, bioprospecting) and forest benefits (e.g. soil conservation, soil fertility, watershed protection) are excluded. Services and benefits are even more difficult to assess and quantify than NWFP and have therefore already been excluded from most publications dealing with NWFP.

Above adapted from Anon., 1999a.

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3. OVERVIEW OF THE TRADE IN NWFP AND THE CONTRIBUTION OF THIS TRADE TO LIVELIHOODS

3.1 The Trade in NWFP

The sale and exchange by people of wild plant and animal resources is an issue that lies at the very heart of the relationship between biodiversity conservation and sustainable development. The increase in demand for, and consumption of, natural resources is causing their depletion at an alarming rate and while not all of this is due to the trade in wild plants and animals, it remains one of the underlying causes of biodiversity loss (Broad *et al.*, 2003).

The lack of information on trade in wild plants and animals, and their use in general, makes it very difficult to estimate total and relative levels of wild plant and animal use for domestic and commercial purposes (Burgess, 1992) and the dividing line between purely subsistence use and trade for commercial purposes is often blurred (Freese, 1998). The trade is certainly significant and the value of the international trade in NWFP has, in 2001, been estimated at US\$11 billion per annum (Broad, 2001).

While the majority of wild animal and plant trade is legal, much of it is illegal and traders operating in both sectors adapt to market trends, regulatory changes – including the introduction of trade-related measures – and supply-side changes and challenges. The trade is complex, dynamic and continuously evolving and frequently poses a major challenge to the conservation of NWFP, either directly through over-exploitation or indirectly through impacts caused, for instance, by the introduction of invasive species (Broad *et al.*, 2003).

Uses of internationally traded NWFP

Wild species are traded internationally in many forms – raw, semi-processed and processed – to produce a wide variety of products. An overview of a number of these uses is provided below while more detail is provided in Table 1.

- **Medicines** – many medicines, both traditional and ‘western’ are based on wild plants or the compounds extracted from them. Approximately 1 000 plant species have been identified in international trade in East Asia alone (Lee, in prep. In: Roe *et al.*, 2002) and 700 imported for use within Europe. The global international trade in medicinal and aromatic plants exceeded 440 000 t in 1996 with a projected value of US\$1.3 billion (Lange, 1998).
- **Food** - While the majority of wild plants and animals collected or hunted is used for subsistence purposes, there is a substantial international trade in a variety of non-timber forest products. NWFP examples include brazil nuts, palm hearts, pine nuts, spices and various mushroom species.
- **Ornaments and furnishings** – A wide variety of wild plant and animal products are used for decorative and ornamental purposes and are frequently traded as tourist items. For NWFP, these include elephant ivory, reptile and other skins, curios and feathers.
- **Clothing** – Skins, furs, feathers and fibres from numerous reptiles, birds and small mammals are traded internationally to make clothing and related products. Some are ultimately sold in their processed form as high value fashion items.
- **Pets or hobbies** – The increased availability of air transport around the world has broadened the variety and numbers of wild species that are traded for use as pets or hobbies. The international trade in related NWFP is dominated by reptiles and birds but also includes invertebrate species such as scorpions and spiders.

Table 1: List of Internationally Traded Non-Wood Forest Products.

Category	Products
Food products	Nuts. Brazil nuts, pine nuts, pignolia nuts, malva nut, walnuts and chestnuts. Fruits. Jujube and Ginkgo. Edible fungi. Morels, truffles and pine mushrooms. Vegetables. Bamboo shoots and palm hearts. Starches. Sago. Bird nests. Oils. Sheanuts, babacu oil, sal or tengkawang or illipe oil. Maple sugar.
Spices and condiments	Nutmeg, mace, cinnamon, cassia, cardamom. Galanga, allspice, caraway
Industrial plant oils	Tung oil, Neem oil, Jojoba oil, Kemiri or candle or lumbang oil, akar wangi and kapok oils.
Plant gums	Gums for food uses. Gum arabic, tragacanth, karaya and carob gums. Technological grade gums. Talha and combretum gums.
Natural pigments	Annatto seeds, indigo.
Oleoresins	Pine oleoresin, copal damar, gamboge, benzoin gum, dragon's blood (Benjamin) copaiba oil, amber
Fibres and flosses	Fibres. Bamboo, rattan, xate attap, aren, oster, raffia, toquilla straw products, cork, esparto, Erica and other broom grasses. Flosses. Kapok or silk cotton.
Vegetable tanning materials	Quebracho, mimosa, chestnut and catha/cutch.
Latex	Natural rubber, gutta percha, jelutong, sorva and chicle.
Insect products	Natural honey, beeswax, lac, silk, mulberry and non mulberry silks, cochineal aleppo galls.
Incense woods	Sandalwood, gharu or aloewood.
Essential oils	Various
Plant insecticides	Pyrethrum, Derris, Medang and Peuak Bong.
Medicinal plants	Various
Wild plants	Various
Animals and animal products	Ivory, trophies, bones, feathers, maleo eggs, live animals and birds.
Miscellaneous products	Bidi leaves, soap berries (soap nut), Quillaia bark, cola nut, chewing sticks, lacquer, dom nuts or ivory nuts.

Source: Adapted from Iqbal, 1993.

Box 1: The value of some NWFPs**From Cameroon**

The numerous NWFP found in Cameroon are traded at local, national, regional and international levels. For instance, in a single market, New-Bell, Douala in the humid forest zone of Cameroon, the annual commercial value of a highly traded NWFP such as njansang nuts (*Ricinodendron heudelotii*) was estimated at US\$248 700 in 1998 and US\$464 235 in 1999 (Ngono and Ndoye, 2004). The value of the African plum or safou fruit (*Dacryodes edulis*) market in Cameroon was estimated at over US\$ 7 million in 1997 and exports from Central Africa and Nigeria to Belgium, France and the UK have been valued at over US\$2.2 million in 1999. The total commercial value of wild mango (*Irvingia spp*) trade in 2000 in ten major markets in the forest zone of Cameroon stood at over US\$825 714. The value of NWFP traded in local markets in the humid forest zone of Cameroon was estimated at US\$1.6 million during the first six months of 1996.

At an international level, France and Belgium import annually over 100 t of *Gnetum* spp. (tree foliage eaten as leaf vegetable) worth 2.0 billion FCFA (USD3.07 million) in the French and Belgian markets (Tabuna, 1999). In 1999, the value of African cherry bark (*Prunus africana*) used in the treatment of benign prostate hyperplasia in Europe and North America was estimated at over US\$700 000 to Cameroon and US\$ 200 million to pharmaceutical companies.

From Bolivia

In 2004, the export of Bolivia's two most important commercialised NWFPs namely, Brazil nuts (*Bertholletia excelsa*) and Palm Heart (*Euterpe precatoria*) comprised a value of US\$ 53 mln and US\$ 4 mln respectively, consisting of 3% of the total value of all exported products that year (IBCE; INE; UDAPE, 2005).

From Papua New Guinea

In 2002, the total production of sandalwood (*Santalum macgregorii*) in Papua New Guinea concerned 54 tons of which 85% is exported to Hong Kong, Japan, Singapore and Taiwan for the total value of US\$ 40,358 (PNG FA, 2002). Another important NWFP in Papua New Guinea is Agarwood, an expensive incense produced by *Aquilaria spp* and *Gynerops spp*, which is mainly bought by rich sheiks in the Middle East. The total value of the 4.1 ton of Agarwood exported in 2002 from Papua New Guinea to the transfer market in Indonesia was US\$ 273,270 (IAC Proceedings, 2002; FAO, 2005).

From Namibia, Botswana and South Africa

Devils claw (*Harpagophytum spp.*) is a medicinal plant, which is both used in traditional medicine and traded on the international market. In 2001, total trade reached 700 ton, mainly supplied by Namibia (92% of world exports) as well as Botswana (5%) and South Africa (3%). The main importer is Germany (459 t imported from Namibia), followed by France and South Africa (CITES, 2002). Namibian exports of devil's claw are estimated to be worth more than US\$ 1.5 million and possibly as much as US\$ 2.2 million in foreign exchange earnings per annum, which represents a significant contribution to the country's economy (Cole & Du Plessis, 2001).

References:

IBCE (2004) Statistic yearbook of Exports of Bolivia 2003

- **Ornamental Plants** – A significant percentage of what are now considered common garden and indoor plants are the product of international trade that has been taking place for hundreds of years. This includes many bulbous species, orchids, tree ferns, bromeliads, cycads, palms and cacti. While much of the trade is now in artificially propagated plants, there are still millions of wild collected plants traded internationally each year.
- **Manufacturing and Construction** – NWFP including rattan and bamboo, plant oils and gums, dyes, resins, latex and many other products are traded internationally in huge volumes.

Above adapted from Roe *et al.*, (2002).

Key Countries Involved in the International Trade in Wild Plants and Animals

As a result of research undertaken by the FAO, China was identified as the exporter of the largest quantities of wild plants and animals. Other major suppliers are India, Indonesia, Malaysia, Thailand and Brazil. In general, trade flows are from developing to developed countries with approximately 60 per cent of all NWFP in trade being imported by the US, EU and Japan (Iqbal, 1995). Amongst those countries for whom the trade in wild plants and animals is commercially significant, are included some of the poorest countries and some of the countries richest in biodiversity resources. The trade presents both threats (e.g. to species and habitats in countries rich in biodiversity such as Madagascar, Indonesia and Malaysia) and opportunities (in that the trade makes a significant contribution to household economies) to many countries.

The trade in medicinal and aromatic plants

It is difficult to assess how many medicinal and aromatic plants (MAPs) are commercially traded, either on a national or even an international level. The bulk of the plant material is exported from developing countries while major markets are in the developed countries. An analysis of UNCTAD trade figures for 1981–1998 (see Table 2) reflects this almost universal feature of MAP trade, and demonstrates that Europe is the dominant import region (Schipmann *et al*, 2002).

Table 2 The 12 leading countries of import and export of medicinal and aromatic plant material from 1991-1998

Country of import	Volume [tonnes]	Value [1000 US\$]	Country of export	Volume [tonnes]	Value [1000 US\$]
Hong Kong	73 650	314 000	China	139 750	298 650
Japan	56 750	146 650	India	36 750	57 400
USA	56 000	133 350	Germany	15 050	72 400
Germany	45 850	113 900	USA	11 950	114 450
Rep. Korea	31 400	52 550	Chile	11 850	29 100
France	20 800	50 400	Egypt	11 350	13 700
China	12 400	41 750	Singapore	11 250	59 850
Italy	11 450	42 250	Mexico	10 600	10 050
Pakistan	11 350	11 850	Bulgaria	10 150	14 850
Spain	8 600	27 450	Pakistan	8 100	5 300
UK	7 600	25 550	Albania	7 350	14 050
Singapore	6 550	55 500	Morocco	7 250	13 200
Total	342 550	1 015 200	Total	281 550	643 200

Source: UNCTAD COMTRADE database, United Nations Statistics Division, New York (Lange 2002).

Table adapted from Schipmann *et al*, 2002.

Box 2: Rattan and Aloe ferox

The importance of international markets to rural livelihoods is illustrated by the international trade in rattan, which is considered the most commercially and socio-economically important NWFP in Southeast Asia and the most important wildlife product in international trade in terms of its economic value, other than timber and fish (Fui and Noor, 1994). Rattan is used locally in Malaysia for both subsistence purposes (food, medicine, building material and fibre) and as a source of cash income. Forest-dwelling Malaysian aborigines traditionally undertake the collection of rattan and while the amount earned is not large, it is in many cases the only source of income for these communities, who are amongst the poorest in Asia (de Beer and McDermott, 1996).

In South Africa, the tapping of the aloe species *Aloe ferox* for the production of aloe bitters employs thousands of South Africans. In 1996, rural communities were estimated to earn approximately ZAR4 million (US\$1,2 million) from harvest for trade in this species (Newton and Vaughan, 1996).

3.2 The Contribution of Wildlife Trade to Livelihoods

Numerous studies have noted the importance of wild plant and animal products, in particular for the poor, who frequently depend on such resources for sustaining their livelihoods. According to the World Bank, approximately 240 million people in the developing world depend partly or fully on forests for their livelihoods. For many of these people, forests provide a range of subsistence and commercial livelihood opportunities, which includes the use of and trade in NWFP (Anon., 2004a).

Understanding the role and potential of NWFP in livelihood strategies has been hindered by a lack of a clear theoretical framework and a functional typology of cases and conditions that characterize each of the groups. Belcher et al (2003) accordingly undertook a large comparative analysis of 61 cases of NWFP commercialization to help find patterns among divergent cases. The ways that forests are valued and managed and their role in alleviating rural poverty are being revisited and the case studies demonstrate the importance of NWFP as supplementary sources of income. The study shows that NWFP activities follow the same economic principles as other income-generating activities and also demonstrates that some of the best income earning opportunities lie in diversified systems that mark a transition from gathering to cultivating and that work to overcome the problem of resource depletion (Ruiz-Perez et al, 2004).

The study found that in poor remote areas, with open access resources, there is a tendency for resource overexploitation of marketed NWFP and a dissipation of rents. This trend is exacerbated where more households are getting involved in harvesting and trade in response to new opportunities (for instance, where a new market emerges or prices of existing NWFP increase), or need (e.g. where economies or communities are affected by contracting economies, drought or other factors that limit income-generating alternatives). Where households make some part of their living from these NWFP, harvesters and producers are at a disadvantage due to unstable markets, generally poor infrastructure, limited market access, and low bargaining power. In such situations, forestry (including NWFP use and trade) is often the default option.

Ruiz-Perez et al (2004) describe this research in a separate paper and report a number of regional processes and trends that affect the use and management of forest products. The research notes that in Asia, forest products are generally more intensively managed than in Africa and that there are accordingly more examples of cases with a stable resource base. Formal producers organizations are

more common in Africa, and producers generally appear to have a better understanding of their legal rights. Both government interventions and private investment tend to be more common in the Asian cases than in those in Africa. The Latin American cases tend to have intermediate economic conditions and population trends, with more variability within the case set than in other regions and NWFP market trends in Latin America are more variable, with a higher frequency of unstable boom and bust situations. Producers have a medium level of organization, and they are generally knowledgeable about their rights and some support from government and NGOs exists, but little private sector investment.

It is important to note that the study does state that the various authors for this research could be more likely to stress different aspects of NWFP development. This is an important consideration in determining whether trade-related instruments have a role to play in regulating NWFP trade in these regions. For instance, in Africa, researchers often emphasize the safety net and subsistence functions of NWFP. In Asia, which has better-developed and more stable markets, research has focused more on market functioning and appropriation by elites. This is very different to Latin America, where markets tend to be more innovative and dynamic, and for this region researchers tend to stress the importance of the 'green market' and the use of certification and eco-labeling in NWFP conservation and development.

In a separate study, the Biodiversity Conservation Network assessed the hypothesis that *'if people can benefit financially from enterprises that depend on nearby forests and other natural habitats, then they will take action to conserve and sustainably use them'*. The study found that community-based enterprise strategies can lead to conservation, but only under limited conditions and never on their own (Salafsky, 2001). Lawrence (2003) notes that NWFP do not necessarily play a role in the livelihoods of the poor, that there still seem to be many doubts about the sustainability of use of NWFP and that it is the priorities of the poor which will determine whether NWFP use results in conservation.

Wild resources are often overlooked by policy-makers, whose focus is typically on key commodities such as timber and cash crops or else on products that are important for food security. As Tomich (1999) suggests, where there is policy intervention in wild markets, it is more likely to be driven by rent-seeking than by efforts to address market imperfections. The implication is that sustainable use initiatives are often introduced in policy contexts that work against their success.

Dependence on NWFP has also been described as a poverty trap (Dove, 1993). Rural people rely on NWFP because they are poor, but it is also possible that they are poor because they rely on NWFP and economic activities for which remuneration is low. Some characteristics of the forest environment and the NWFP economy make it difficult or impossible for those who depend on them to rise out of poverty. Natural forests are often inferior production environments with little infrastructure, high transport costs because of remoteness, few buyers and exploitive marketing chains. The net benefits of NWFP are often too low to justify articulating property rights, and as a result there is limited incentive to invest and increase yields. In the few cases where NWFP have high value, the poor are often excluded from access (Dove, 1993). Furthermore, a sustained increase in the demand for NWFP can lead to the collapse of the resource base, intensive production on plantations outside forests or the production of synthetics that are more competitive than NWFP (Homma, 1992).

Box 3: NWFP trade in Cameroon and Bolivia – a key factor in sustainable livelihoods

Cameroon

Forest-dwellers in Cameroon depend to a large extent on the trade in NWFP for their livelihoods. It is estimated that 70 per cent of the total population of the Takamanda Forest Reserve (TFR) area collects NWFP for consumption and sale which amounts to an estimated income of US\$714 286 per annum to some 15 707 people living in 12 villages within and around the TFR (Sunderland et al., 2002). The harvesters of *Prunus africana* bark around the Mount Cameroon Area get approximately 70 per cent of their annual cash income from the activity (Ndam, 2004). Villagers adjoining the Campo Ma'an National Park in Cameroon earn a monthly income of US\$45 for oil palm and raphia wine, US\$60 from the manufacture of rattan chairs and US\$45 for bush mango per household per season (Sonne, 2001). In the humid forest zone of Cameroon, the average monthly income to harvesters of edible palm weevil larvae is about US\$71 and US\$50 to retailers of roasted larvae. Such income is significantly higher than the monthly income earned by unskilled workers in urban areas or by the producers of cocoa (US\$28) or coffee (US\$50).

Bolivia

For the forest dwelling people in Bolivia, the most important commercial NWFPs are Brazil nut and Palm Heart. In the year 2002, 21,626 people were registered to be employed in the Brazil nut supply chain by an evaluation of INE/IPHAE. Wildlife plays a less important role as commercial NWFP. Of the traded wildlife, caiman (*Caiman yacare*) is the most important species for its leather production. The preliminary results of an evaluation realised by the National Program of Caiman Management in 2005, indicate that around 1750 people are employed in the commercialisation of caiman leathers.

The safety net and poverty-trap aspects of NWFP are linked, inasmuch as the features that make them attractive to the poor also limit their potential for generating increased income. The key issue is how to preserve the role of forests as safety nets in locations where they are more than dead-end poverty traps and where other forms of social insurance cannot take their place.

Ros-Tonen and Wiersum (2003) note that in remote areas, where forest extraction still prevails, NWFP provide subsistence goods like food, medicines and building materials and form a safety cushion in times of economic hardship. The increasing incorporation of rural areas into external commercial networks means there is some scope for improving livelihoods on the basis of NWFP production through the gradual domestication of NWFP species in anthropogenic forest types as well as through the creation of NWFP-related jobs. Such options appear to be promising, in particular in areas where forests perform essential environmental functions and farmers can develop multifunctional production systems and in areas near urban markets where more specialized forest-related activities are feasible.

Belcher *et al* (2003) conclude that commercial NWFP production is an important source of employment and income in a broad range of situations but that in most cases, NWFP production is not the main source of income. People use NWFP as a part of systems, and it is important to consider whole systems in development efforts. Further, they note that the potential for NWFP commercialization to be effective as a tool for biodiversity conservation is limited, partly because the main responses to increased market demand for NWFP are harmful to biodiversity conservation in many situations. There are, however, a number of promising management options. Ultimately, if NWFP are to play a role in poverty reduction, it will have to be through increased and/or more efficient commercial production and trade.

4. OVERVIEW AND DISCUSSION OF TRADE-RELATED INSTRUMENTS

The use of the term “trade-related instruments” appears in the available literature, for all biodiversity trade, to be used almost interchangeably with the terms ‘trade-related measures’ and ‘trade-related mechanisms’. While the term ‘instrument’ does, in certain contexts, indicate a State or internationally developed and recognized legal or policy document, it is certainly not confined to this definition.

No attempt has been made in this analysis to provide a single definition of ‘trade-related instruments’ but rather to focus discussion and analysis on instruments that are directed at trade generally or the trade in NWFP. The following were considered in the determination of which instruments were to form part of the analysis and are helpful in assessing their relevance and potential to positively influence the sustainable use of NWFP and contribute towards the livelihoods of those dependant on them.

Instruments directed at regulating or influencing trade

There exist innumerable international, regional, national and local measures on the use and conservation of wild plants and animals. Many of these measures have an impact both on the trade in NWFP and livelihoods, but not all can be described as trade-related instruments. For instance, measures that create or regulate formally protected areas frequently have indirect impacts on the harvesting of NWFP and in some instances, peoples’ livelihoods, but the underlying basis for developing and implementing the instrument is not to regulate trade, and it would be incorrect to refer to such a measure as a trade-related instrument. Conversely, there are measures such as biodiversity related national import or export controls or a multi-lateral environmental agreement, such as CITES, which are clearly trade-related instruments impacting on biodiversity and, in many instances, on livelihoods.

Impacts of trade-related measures

The impact of trade-related measures may be intentional, as for instance in the case of international or national species trade controls for conservation purposes, or it may be unintentional, as in the case of broad trade measures developed through regional or international trade agreements such as the WTO, where NWFP trade was not a major consideration or target in the development of the measures, yet where the implementation of the measures has the potential to impact on the trade in NWFP. The impact, either on biodiversity or people, is not always necessarily what was desired in the development of the relevant instrument.

A related consideration is that international trade controls do not act in isolation of market forces and in certain cases act in concert with them, which complicates efforts to identify the impacts of trade controls alone. For instance, declines in demand, market responses to changing fashion trends, or a change in the economic strength of consumer countries can all have an impact on international trade (Burgener, 2003).

Incentives versus disincentives

The majority of trade-related instruments are premised on a command and control approach where a failure to comply with the instrument results in the imposition of a penalty or restriction on the trade. Voluntary trade-related instruments such as certification schemes are incentive-based and rely for their use and success on traders and consumers deriving benefit, either financial or ethical, from the trade in

and consumption of NWFP sourced, processed and traded in accordance with sound social and environmental principles.

Legally Binding Instruments and Non-Legally Binding Instruments

While this analysis has not attempted to separate or categorise the many instruments discussed according to whether they are considered legally binding or non-legally binding, a brief discussion of these terms is useful, particularly in understanding the obligations imposed by international agreements dealing with NWFP.

At a domestic level, the distinction between legally binding instruments and non-legally binding instruments is generally clear. Laws (be they national, provincial or local) in the form of acts, decrees, codicils, by-laws and so on are legally binding and can be enforced through criminal, civil or administrative procedures.

Policies, guidelines and other similar tools are not legally binding. They are frequently used to describe government policy on a particular issue but cannot be enforced and depend for their implementation on the development of associated legislation.

The status of regional and international instruments is less clear and certain agreements or processes pose greater or less obligations on those who align or, conversely, fail to align themselves with the relevant conservation and management measures. The terms 'soft' and 'hard' law are often used in reference to international agreements but a 'hard law' international agreement is not necessarily legally binding in the same manner that a national law is legally binding. The majority of international agreements, for instance, are non-self executing and thus require the development of specific national legislation to ensure their implementation and to enable Member States to fulfill their obligations in terms of an international agreement.

Edison (in press.) notes that the term 'soft law' is used to refer to instruments that were not intended to give rise to legal obligations but which have been drafted in a quasi-legal style, and for the most part were not intended (at least not directly) to create or lead to the development of any legal obligations.

There can be little doubt that a mixture of hard and soft law has had its advantages, in particular through allowing certain principles to be stated in soft law documents which are largely hortatory. Soft law documents often reveal the stages in the development of concepts and principles, such as the precautionary approach. They can provide testing grounds for new ideas, or adaptations of old ideas to new areas.

5. APPLICATION OF TRADE-RELATED INSTRUMENTS TO THE INTERNATIONAL TRADE IN NWFP

5.1 International and regional measures

5.1.1 International and regional trade-related instruments

The most significant set of global trade rules is found within the World Trade Organization (WTO). There are numerous other regional trade agreements aimed at trade liberalisation such as the North American Free Trade Agreement, the Free Trade Agreement of the Americas and the Southern African Customs Union Agreement. As NWFP trade is comparatively less significant than the trade in timber and many other commodities, NWFP do not form the focus of these agreements or associated discussions. They do, however, impact on NWFP trade as do trade conditions determined through regional economic groupings such as the European Union (EU), the Association of Southeast-Asian Nations (ASEAN) and Common Market for Eastern and Southern Africa (COMESA). In Bolivia, for instance, five different types of export forms are possible depending on the destination of a consignment, each carrying separate tariff conditions.

5.1.1.1 The World Trade Organization

The WTO embodies a set of global rules that aim at trade liberalization, through reduction of tariff and non-tariff barriers to trade, as well as establishing a strong set of legal rules based on non-discrimination between countries and between products. Despite the commitment to sustainable development and environmental protection in the Preamble to the Agreement Establishing the WTO, the WTO does not contain rules that ensure that trade policy supports the conservation and sustainable use of forests, including NWFP. In principle, trade liberalization can play a positive role in improving the lifestyles of poor people who are involved in the export of forest products.

There is a lack of certainty on the relationship between WTO rules and multilateral environmental agreements (MEAs) and there are concerns that the WTO will:

- Undermine the full effectiveness of MEA rules aimed at forests.
- Prevent countries from using export bans to promote sustainable development. National export controls such as those requiring that materials undergo some type of processing prior to export may be open to challenges under the WTO. The removal of these controls could, in specific instances, undermine widespread efforts at a national level to encourage value-added processing at source in order to improve rural livelihoods and local economies as well as secure conservation objectives.
- May not allow the application of independent forestry certification.
- May prevent appropriate protection of traditional forest-related knowledge and effective efforts to combat illegal trade in forest products (Tarasofsky, 2003).

WTO rules do not support positive efforts to guide trading patterns in support of sustainable development. Furthermore, it is unclear whether incentives aimed at sustainable forest management contained in Generalized Tariff Preferences are WTO legal, since there is now a challenge pending to the EU scheme. WTO rules no longer permit subsidies for adjusting to new environmental regulations. Developing countries and civil society stakeholders are effectively shut out of much of the decision-making in the WTO (Tarasofsky, 2003).

A detailed study of the potential impacts of the WTO Doha round of negotiations on forestry is currently under way. Initial results indicate that trade liberalisation appears to benefit forest-export-orientated developed countries more than developing countries. However, those with considerable forest resources, such as Indonesia, Malaysia, Brazil and Chile, and those with potential for fast-growing plantation development, should benefit economically. The study notes that unless adequate safeguards are adopted, developing countries may face environmental and social costs.

A preliminary conclusion at this stage of the study is that further reduction of tariffs is unlikely to greatly influence the consumption and production of forest products. At the world level, impacts arising from the Doha agenda will be small compared to those from economic growth, population growth and commercial development of forest products. In most contexts, increased trade alone is unlikely to cause significant direct impacts, although it can accentuate negative trends unless appropriate forest governance systems are in place and enforced. Trade liberalisation can help improve forest governance and support movement towards sustainable forest management. Conversely, it can also have a negative impact by boosting illegal activities or expanding the economic harvesting area, without a corresponding increase in the capacity to regulate. Beneficial impacts are more likely to occur and be fairly distributed where forest governance is robust. It must be noted that this study is focused on forestry rather than NWFP so the preliminary (and ultimately, the final) findings are not necessarily applicable to the trade in NWFP (Anon., 2005b).

The WTO and the CBD

While the Convention on Biological Diversity (CBD) does not require measures that are directly related to international trade, there is a close relationship between many of its provisions – as well as those of its Biosafety Protocol – and the provisions of the multilateral trade agreements of the WTO. The trade-related work of the Convention is part of a broader effort of the international community to ensure harmony and mutual supportiveness between trade rules and international environmental law, in order to both maintain biodiversity and promote international trade.

- The Parties to the CBD have emphasized the interrelationship between the Convention and the provisions of the WTO Agreement on Trade-related Aspects of Intellectual Property Rights (TRIPS Agreement), and the need to further explore this interrelationship. Specifically, the Conference of the Parties to the CBD has recognized the role of intellectual property rights in encouraging access to genetic resources and the sharing of benefits from the use of those resources, as well as in contributing to the protection of traditional knowledge. At the fourth WTO Ministerial in Doha, in November 2001, the TRIPS Council was instructed to examine the relationship between the TRIPS Agreement and the CBD and the protection of traditional knowledge and folklore⁶. The WTO Committee on Trade and Environment was also instructed to further take up relevant provisions of the TRIPS Agreement⁷.
- The WTO Agreement on Agriculture and the Doha Ministerial Declaration mandated further negotiations relating to agricultural trade, on market access, export subsidies and on trade-distorting domestic support. Special and differential treatment for developing countries is an integral part of all elements of the negotiations and non-trade concerns are taken into account. These negotiations are taking place in the Special Session of the WTO Committee on Agriculture. This mandate has important linkages with the CBD's programme of work on incentive measures and its focus on positive incentives for the conservation of biodiversity and its sustainable use as well as on the removal or mitigation of perverse incentives.

⁶ Paragraph 19 of the Doha Ministerial Declaration

⁷ Paragraph 32 of the Doha Ministerial Declaration

- Parties to the CBD have emphasized the need to ensure mutual supportiveness of the Cartagena Protocol on Biosafety and, in particular, the WTO Agreements on Technical Barriers to Trade (the TBT Agreement) and on the Application of Sanitary and Phytosanitary Measures (the SPS Agreement). The Biosafety Protocol is based on the precautionary approach and establishes a set of procedures relating to import and export of living modified organisms to ensure that Parties can make informed decisions. The Protocol may, therefore, have trade implications and relate to the ongoing discussions under the SPS and TBT Committees on the issue of living modified organisms.

At the Doha Ministerial Conference, Ministers agreed to start negotiations on, *inter alia*, the relationship between existing WTO rules and specific trade obligations set out in multilateral environmental agreements (MEAs), procedures for regular information exchange between MEA Secretariats and the relevant WTO committees, and criteria for the granting of observer status⁸. These issues are key to further enhance the mutual supportiveness between the CBD and the rules and provisions of the WTO.

5.1.1.2 North American Free Trade Agreement

Implementation of the North American Free Trade Agreement (NAFTA) began on January 1, 1994. The agreement will ultimately remove most barriers to trade and investment among the three parties – the US, Canada, and Mexico. A number of trade related tariffs were eliminated immediately, with others being phased out over periods of 5 to 15 years.

Sanitary and Phytosanitary Measures: NAFTA imposes disciplines on the development, adoption, and enforcement of sanitary and phytosanitary (SPS) measures. Disciplines contained in NAFTA are designed to prevent the use of SPS measures as disguised restrictions on trade, while still safeguarding each country's right to protect consumers from unsafe products, or to protect domestic crops and livestock from the introduction of imported pests and diseases.

Export Subsidies: The three NAFTA countries will work toward the elimination of export subsidies in North America, in pursuit of the broader objective of eliminating such subsidies worldwide. The United States and Canada will be allowed to provide export subsidies into the Mexican market to counter subsidized exports from other countries. Neither Canada nor the United States is allowed to use direct export subsidies for agricultural products being sold to the other, and both countries are required to consider the export interests of the other whenever subsidizing agricultural exports to third countries.

5.1.1.3 Free Trade Agreement of the Americas

The negotiations for the Free Trade Agreement of the Americas (FTAA), which were initiated in 1994 and are expected to be completed by the year 2005, still lack a specific chapter on the environment. Thus far only few discussions and references have been made to the environment and sustainable development. As with NAFTA, available literature highlighting the potential negative impact of FTAA on the environment does not deal with NWFP trade and is a possible area of proposed further research.

5.1.1.4 Southern African Customs Union

The Southern African Customs Union (SACU), between South Africa, Botswana, Lesotho, Namibia and Swaziland, the oldest Customs Union in the world, entered into force on the 1st of March 1970,

⁸ Paragraph 31 of the Doha Declaration

thereby replacing the Customs Union Agreement of 1910. The aim of SACU is to maintain the free interchange of goods between member countries. It provides for a common external tariff and a common excise tariff to this common customs area.

There are no direct references in the Agreement to the trade in wild plants and animals, but there are a number of provisions which have the potential to impact on the trade in NWFP. For instance, Article 24 allows freedom of transit of goods consigned to and from the areas of other Member States. Such a provision has the potential to remove trade barriers which could then have a number of impacts on both NWFP and people. Trade may increase, benefiting certain individuals within the trade chain, but an increase in trade may have a negative impact on the resource.

Article 24 does note further that a Member State may impose conditions on transit where it deems it necessary to protect its legitimate interests in respect of goods of a kind of which the importation into its area is prohibited on grounds of public morals, public health or security, or as a precaution against animal or plant diseases, parasites and insects, or in pursuance of the provisions of a multilateral international agreement to which it is a party.

5.1.2 International and Regional Environmental Agreements

There are well over a hundred international, regional and bilateral agreements dealing with a broad range of environmental issues. Very few of these contain specific provisions dealing with the trade in wild plants and animals and even fewer have direct applicability to the trade in NWFP. The key international agreements and a selection of relevant regional agreements are discussed below.

5.1.2.1 The Convention on International Trade in Endangered Species of Wild Fauna and flora

The Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) was developed in the early 1970's in response to concerns that unregulated international trade in wild species of wild fauna and flora could have a detrimental impact on species and their ecosystems. It currently has 167 State Parties and regulates trade in about 30 000 species. Only a small number of these are actually endangered, the majority being species for which trade measures have been introduced to avoid conservation threat. Parties acceding to CITES agree to place controls on international trade in species that are listed in any of the Convention's three Appendices.

Appendix I includes species that are considered by the Parties to be threatened with extinction and virtually all international trade in these species for commercial purposes is prohibited (exceptions are made for certain specimens, e.g. artificially propagated plants).

Appendix II includes species that are not necessarily threatened with extinction but that might become so unless trade is closely controlled. International trade in Appendix II species must be maintained within sustainable levels and consignments must be accompanied by CITES export permits.

Appendix III includes species for which a Party considers the co-operation of other countries to be necessary to prevent unsustainable or illegal trade in native species. Parties can unilaterally include species in this Appendix.

There are currently over 800 animal and plant species on CITES Appendix I, while Appendix II contains over 4 000 animal species and approximately 25 000 plant species.

Generally speaking, an increase in trade controls via CITES and/or other measures has the effect of making illegal what was once legal, either by banning activities outright or only permitting them to be conducted if additional procedures are followed. In certain situations the changes may be minimal – for instance requiring only the issuance of an export document – whereas in others, for example where a species is transferred to CITES Appendix I, virtually all international trade for commercial purposes becomes illegal (Roe *et al*, 2002).

Livelihood Impacts of CITES Trade Controls

While concerns are more regularly being voiced regarding the potential negative livelihood impacts of increased CITES trade controls, there do not appear to have been many studies gauging the actual impacts once the CITES measures have been implemented. The following are brief descriptions of the impact of CITES trade controls on four NWFP and associated livelihoods.

Goffin's Cockatoo – A Lose-Lose Scenario for Conservation and for Livelihoods

Goffin's cockatoo *Cacatua goffini* is endemic to the Indonesian Tanimbar islands where it is considered an agricultural pest, damaging almost two percent of the islands' maize crop annually (Cahyadin *et al*, 1994). The species has been listed in CITES Appendix II since 1981 and the government of Indonesia established export quotas, which peaked at 8 400 birds in 1989. Income from capture of the birds destined for trade, while only accruing to a relatively small number of people, was ultimately distributed more widely among the villages through onward spending and support to dependants (Jepson, Brickle and Chayadin, 2001). Farmers whose maize had been destroyed by the birds saw the revenue from trade as valuable compensation as well as a significant source of additional cash income (MacKinnon, 1998).

Following a ban on international commercial trade in the species in 1992 through a CITES Appendix I listing, this source of cash income has largely been lost to these people as the species is not popular locally. Farmers continue to trap the birds but, as they can no longer be exported to foreign markets, they are simply killed (MacKinnon, 1998).

Available information indicates that trade in Goffin's Cockatoos did not present a threat to the species at the time the CITES Appendix I proposal was put forward. The fact that local farmers are trapping and killing the birds due to the export ban demonstrates that factors besides market demand are driving the removal of the species from the wild.

*African grey parrot (*Psittacus erithacus*) in Cameroon: a CITES failure or modest success?*

Cameroon signed the CITES treaty in 1993, setting the export quota for African grey parrots on 12,000 per year, since it was listed on Appendix II in 1994. However, in 1995 and 1996 this quota was exceeded, with even more than 11,000 in 1996 (CITES Notification No. 945). This resulted in CITES informing the parties not to except any Grey parrots from Cameroon in 1997 (CITES Notification No. 993), after which the export dropped that year to 767 parrots. However, the revoking of prohibition in 1998 resulted in the quota again being exceeded in 1998 and 1999 with respectively 545 and 3,220 parrots (CITES, 2001).

*Caiman (*Caiman yacare*) in Bolivia: a CITES success*

After a long period of over-exploitation of Caiman (*Caiman yacare*) for its leather in Bolivia, the government installed a general prohibition of its hunting in 1990 (and had signed CITES in 1987) resulting in the population's recovery. The population grew strong and hunting became again possible,

though regulated by quotas which would assure it not to be over-exploited again. CITES set the quota of 50,000 caiman leathers which can be exported per year, which till this moment have been respected and gave estimated returns to the local people of around US\$ 0.38 for 40,062 skins in 2003 and US\$ 0.44 for 46,720 skins in 2004 (WCMC, 2005).

Fischer's Lovebird – Changing Beneficiaries as a Result of CITES

Wild specimens of Fischer's Lovebird *Agapornis fischeri*, endemic to Tanzania, were traded in greater numbers than any other parrot species during the 1980's, peaking at over 87 000 birds in 1987 (Edwards and Broad, 1992). Trapping was conducted exclusively by men during the dry season and involved an estimated 240-300 trappers and 720 to 1500 assistants (Moyer, 1995). As a result of a 1992 CITES review process into the impact of the trade on wild populations, a moratorium on exports was imposed, with the intention of allowing the species to recover. This ban does not apply to captive-bred birds and net exports from non-range States increased from 11 000 in 1991 to 95 000 in 1999. China is the main country of export for captive bred birds, followed by South Africa. Tanzania, once the only country in which Fischer's Lovebirds occurred, lost all revenues resulting from the international trade of this species in only a matter of years. While the export ban was not the sole reason for the decline in benefits to Tanzanian trappers - wild populations had declined dramatically by the time of the export – and while captive breeding has resulted in other beneficiaries, it seems likely that more effective management of the trade earlier on in order to keep it at sustainable levels would have led to a different conservation and livelihood outcome.

Vicuña – Rewards for Conservation and Livelihoods

Vicuña are wild camelids that inhabit high regions of the Andes of Argentina, Bolivia, Chile and Peru and are prized for their fine wool. Hunting of the species resulted in a decline of the species which led to both a regional agreement by the range States as well a CITES Appendix I listing prohibiting international trade. The populations have subsequently recovered to the point where commercial trade, according to certain conditions, is now permitted for a number of populations in all four countries. Communities in Peru have been given progressively more control over Vicuña, initially with use and stewardship rights and expanding to property rights (Lichenstein *et al*, 1999). In most cases, indigenous communities living in the Peruvian Puna are living below the poverty line and income generated from the sustainable management of Vicuña has significant potential to boost the local economy in the long term. Vicuña populations in Peru have increased from approximately 67 000 animals in 1994 to over 100 000 in 1997.

Devil's Claw – The Impact of a CITES Listing Proposal

Commercial harvesting of devil's claw *Harpagophytum procumbens*, the Southern African medicinal plant, has only taken place in South Africa for the past two years, but has been occurring in Namibia and Botswana since the 1960's. Currently, Namibia exports approximately 600 t per annum and annual earnings amount to N\$ 10 million (US\$1,2 million). An estimate of 12 000 Namibians in the present economy depend on devil's claw for their main source of income. The arid system of the Kalahari provides restricted livelihood opportunities for rural people and livestock production, mainly for subsistence purposes, has historically been the only livelihood option. Devil's claw harvesting provides an opportunity for the generation of a cash income where few other sources of income are available. Earnings from harvesting are low with a typical harvester earning between R8 and R21 per kg (US\$1,3 and US\$3,5 per kg @ 2004 rates) of dried material harvested and prepared. Sliced dried tubers of devil's claw are currently exported in their raw state and very little processing takes place in South Africa, Namibia or Botswana. Harvesters could obtain higher prices if more value adding steps

in drug production took place within these exporting countries and Namibia, Botswana and South Africa are presently collaborating to investigate this option (Raimondo, 2002).

In late 1999, Germany proposed that the devil's claw be listed on Appendix II of CITES. The range states of Namibia, Botswana and South Africa opposed the listing and it was consequently withdrawn to allow further research. Despite this opposition and NGO protest, the listing proposal had a number of long and medium term impacts.

A Resolution was adopted at the 11th Conference of the Parties to CITES, in terms of which Namibia and other range states that are exporters of devil's claw are required to submit to the Secretariat all available information concerning the trade, management, regulatory measures and biological status of *Harpagophytum* Species.

The various impacts of the proposal were that it resulted in a drop in exports of devil's claw in 2000, had a cost to Namibia in foreign exchange and a drop in income for harvesters. Lombard and du Plessis (2003) note that for devil's claw, it seems that the perceptions around a CITES proposal scared off investors, that a CITES listing automatically implies a problem with the conservation status of the resource, and therefore an additional and serious commercial risk, and that the proposal to list was not helpful in encouraging sustainable use of devil's claw. Two recommendations came out of a regional devil's claw conference held in 2002:

- CITES listing and trade controls are only acceptable where they contribute to sustainable development; and
- CITES should promote awareness that listing does not mean that trade is unsustainable.

The listing of *Prunus Africana* on CITES Appendix II – mixed results for Cameroon

The over harvesting of *Prunus africana* bark, primarily from the wild in Cameroon has had a devastating effect on wild populations of the species. This overexploitation sparked conservation concerns, resulting in the species being listed in Appendix II of CITES in 1994 in order to monitor international trade in the species.

Despite the listing, unsustainable exploitation of *Prunus africana* is still commonplace. Quotas and permits are issued without reference to adequate biological baseline information (Sunderland and Tako, 1999) and the annual sustainable harvest level of *Prunus africana* in Cameroon has always been exceeded (Tieguhong, 2003). For example, in the Mount Cameroon area, the annual sustainable harvest level has been estimated at 209 tons, but each year over 500 tons are harvested, most of it, by illegal operators (MOCAP, 2004). It should be recognized, however, that monitoring the trade of *Prunus africana* is difficult, partly because it is traded in five different forms – unprocessed dried bark, bark extract, herbal preparations in the form of capsules, as a constituent of a hair tonic and as wood.

The impact of listing *Prunus africana* by CITES has, nevertheless, been partially effective in reducing threats as it has helped to raise awareness, both within Cameroon and internationally, about the problems posed by international trade. Several non-governmental, governmental and international bodies are now involved in programmes to promote sustainable management of wild populations, cultivation and monitoring of the trade. The Mount Cameroon Project, for example, has been working with villagers to promote the sustainable management of *Prunus africana*. Villagers are involved in monitoring the forest to guard against *Prunus africana* poachers and to help ensure, for legal harvest, that only a part of the bark is removed (Ndam, 2004). It is hoped that this and similar efforts will suffice to ensure that future supplies of the bark are harvested in sustainable ways.

In order to make CITES a better tool for sustainable development there is a need to make sure that CITES decisions are based on socio-economic as well as biological information through increasing awareness of livelihoods issues within the 'CITES community'; including socio-economic information in the supporting statements for CITES proposals; ensuring that consumer decisions are based on livelihood as well as conservation concerns by increasing consumer awareness that the listing of a species in CITES is not necessarily a sign that it is threatened, and is not equal to a trade ban; and, exploring the potential to link CITES trade controls with certification schemes or other trade-related measures.

It is necessary to ensure that learning resulting from research on community-based wildlife management and NWFP development is brought into and informs decisions taken regarding the international wildlife trade in order to increase the potential for achieving conservation and development aims.

CITES trade bans

An IUCN report (Anon, 2000a) notes there are a myriad of factors that influence the effectiveness of a ban on international trade and conservation status of the species. Of key importance to the effectiveness of the ban on influencing the conservation status of a species is the relationship between the costs of enforcement and the conservation budget. A major drawback of such a ban is that it applies equally to those countries investing and those not investing in conservation of the specified species. Therefore, Appendix I of CITES may generate perverse incentives by treating all producer states equally, despite their different conditions and efforts to conservation.

Regulation of Rhinoceros trade through CITES – impacts of a CITES Appendix I trade ban.

Leader-Williams (2003) notes that overall, the CITES Appendix I listing of all five rhino species has failed to stop either trade or poaching within the rhino family. Indeed, the raised stakes caused by making international trade in rhino horn illegal was evidenced by soaring prices for rhino horn in consumer markets. In turn, this may have stimulated poaching in range states where rhinos were inadequately protected and where the incentive structure favoured poachers rather than conservationists. However, it is impossible to say whether the decline in Black Rhino numbers have been swifter without the listings as there is no available data to determine this. A number of economists believe that CITES has been responsible for regulating the extinction process in rhinos.

CITES and the bushmeat trade

The international trade in bushmeat is very minor in comparison with the enormous domestic markets for meat. Recognizing cross-border movements in the bushmeat trade, CITES established a Bushmeat Working Group at the 11th Conference of the Parties to the Convention. The Working Group has no real regulatory role but rather promotes awareness and action to achieve better and sustainable management of the bushmeat trade (Bowen-Jones, 2003).

5.1.2.2 The Convention on Biological Diversity

The CBD was signed by 150 government leaders at the 1992 Rio Earth Summit and entered into force in December 1993. There are currently 188 Parties to the Agreement. The three objectives of the Convention are: the conservation of biodiversity, the sustainable use of biological resources and the fair and equitable sharing of benefits arising from the use of genetic resources. The principles of the CBD are broad in scope and unlike CITES, the CBD does not contain detailed provisions on

implementation. Accordingly, implementation of the CBD depends on the incorporation of the Convention and associated policies and guidelines into the national legislation of Member States.

Access and Benefit-Sharing

Equitable access to biological resources and the sharing of benefits arising from the use of these resources are regulated in the CBD through Article 15⁹. Following the establishment of a Panel of Experts at the 4th Conference of the Parties to the CBD, and the subsequent ad hoc open ended Working Group on access and benefit-sharing, the Working Group developed what are now known as the Bonn guidelines on Access and Benefit-Sharing. These guidelines are to be followed by the Parties to the CBD on a voluntary basis and their purpose is to provide guidance to policy makers and national legislators when taking legislative, administrative or policy measures. These guidelines are useful to all stakeholders through for instance provisions on roles and responsibilities in access and benefit-sharing, and suggested elements for Material Transfer Agreements (Guendling, 2003).

The Bonn guidelines themselves could not be described as trade-related measures as they cannot be enforced at a national level and implementation and enforcement depends on the development of national-level legislation. Numerous countries and regions have, however, either adopted or are in the process of adopting access and benefit-sharing policies and legislation.

Examples at a regional level include The Andean Community of Nations (Venezuela, Colombia, Ecuador, Peru and Bolivia), which has developed The Common Regime on Access to Genetic Resources, 1996; and, The Organization of African Unity (which consists of 52 African States) which has developed The African Model Law on the Protection of the Rights of Local Communities, Farmers and Breeders and for the Regulation of Access to Biological Resources, 1998.

Access and benefit-sharing laws and initiatives at the national level

Regulatory framework for ABS in Costa Rica

Because non-timber forest resources are such a complex and diverse group of products, they do not lend themselves to the development of general policies, enabling legislation or strategies. Promotion of the sustainable use of NWFP includes sound property rights and benefit-sharing provisions. The issues of property rights and benefit-sharing have received considerable attention in recent years. Having sound related legislation in place for NWFP is becoming increasingly important for NWFP that

⁹ Article 15. Access to Genetic Resources

1. Recognizing the sovereign rights of States over their natural resources, the authority to determine access to genetic resources rests with the national governments and is subject to national legislation.
2. Each Contracting Party shall endeavour to create conditions to facilitate access to genetic resources for environmentally sound uses by other Contracting Parties and not to impose restrictions that run counter to the objectives of this Convention.
3. For the purpose of this Convention, the genetic resources being provided by a Contracting Party, as referred to in this Article and Articles 16 and 19, are only those that are provided by Contracting Parties that are countries of origin of such resources or by the Parties that have acquired the genetic resources in accordance with this Convention.
4. Access, where granted, shall be on mutually agreed terms and subject to the provisions of this Article.
5. Access to genetic resources shall be subject to prior informed consent of the Contracting Party providing such resources, unless otherwise determined by that Party.
6. Each Contracting Party shall endeavour to develop and carry out scientific research based on genetic resources provided by other Contracting Parties with the full participation of, and where possible in, such Contracting Parties.
7. Each Contracting Party shall take legislative, administrative or policy measures, as appropriate, and in accordance with Articles 16 and 19 and, where necessary, through the financial mechanism established by Articles 20 and 21 with the aim of sharing in a fair and equitable way the results of research and development and the benefits arising from the commercial and other utilization of genetic resources with the Contracting Party providing such resources. Such sharing shall be upon mutually agreed terms.

are traded internationally. Countries such as Costa Rica have demonstrated that having clear and transparent intellectual property rights and benefit-sharing legislation in place is helpful in attracting investments in developing biodiversity-derived products (Anon., 2003a).

In Costa Rica, the State exercises exclusive sovereignty over all components of biodiversity. Related laws regulate specifically the use, management, associated knowledge and equitable distribution of benefits on derived costs of the use of biodiversity. Costa Rica's regulatory framework for access and benefit-sharing is summarized in an INBio-MINAE Co-operation agreement, which is an Agreement between the Costa Rican government's National Biodiversity Institute (INBio) and Merck and Co. Inc (Merck), a research-driven multinational pharmaceutical services company. The agreement permits Merck to collect biological samples for the purpose of bioprospecting and requires 50% of any economic and material benefits INBio receives through bio-prospecting to be transferred to the Costa Rican Ministry of Environment and Energy (MINAE) and that this amount is to be exclusively invested in the management and conservation of wild lands administered by MINAE. Access to knowledge and genetic resources requires prior informed consent from relevant stakeholders but distribution of benefits accrued from bioprospecting has been complex and does not appear to have significantly benefited rural communities (Joubert, 2003)

ABS Arrangements in Fiji between the University of the South Pacific, the Strathclyde Institute for Drug Research and the Verata Community

Verata is a country of eight villages located on the east coast of Viti Levu, Fiji. Through a series of agreements the University of the South Pacific is to supply to the Strathclyde Institute for Drug Research extracts of Fijian plants and marine organisms for use in the discovery of drugs and agrochemicals. The Verata community, in return for access to biological resources, receives the extract licensing fee. Approximately 300 were licensed in 1998 which resulted in an income of USD30 000 accruing to the community. The money is paid into a Trust fund that is to be used to finance activities and initiatives to promote the sustainable development of the Verata people (Joubert, 2003).

A benefit-sharing agreement for Prunus Africana Harvesters in Cameroon

In an effort to reduce overexploitation and generate greater benefits for local communities from the commercial use of *Prunus africana* bark in Cameroon, an agreement - "*The Agreement for Sustainable Management and Production of Prunus africana at Mapanja Village*" - was signed between the main purchasing company, Plantecam Medicam, and the village of Mapanja in 1997. This agreement outlined general benefits for the village (e.g. increased revenues from higher payments per ton collected and training in sustainable management techniques) and serves the wider conservation objective of managing the species sustainably. The major impact of the agreement on conservation and development of *Prunus africana* is that the local people report a reduction in illegal and unsustainable harvesting of *Prunus* bark in most areas, increased economic benefits to the village and better monitoring of harvesting activity after the agreement was signed (Hall et al., 2000; Laird and Lisinge, 1998).

Management of Wildlife action plan in Bolivia in the context of the CBD

In the context of the CBD signed by Bolivia, the National Direction of Conservation of Biodiversity (DGB) defined an Action Plan for the Management of Wildlife in 1995. As part of this Action Plan, population evaluations of caiman were realised in the departments Beni and Santa Cruz during 1995 and 1996. Based on the outcomes of these evaluations, the first National Regulation of Handling (SD 24774) was passed in July 1997, comprising of an experimental management plan which allows the commerce of caiman in the departments of Beni and Santa Cruz with annual hunting quotas based on

the evaluations. Besides, an experimental phase started based on a different hunting strategy using harpoons instead of the traditionally used traps, giving the possibility to select with more security only adult, male species.

Though the new hunting strategy is still in development, the regulated use of caiman seems successful, contributing to local livelihoods while hunting quotas based on population evaluations are not exceeded.

The CBD Sustainable Use Guidelines

The Addis Ababa Principles and Guidelines for the Sustainable Use of Biodiversity consist of 14 interdependent practical principles, operational guidelines and a few instruments for their implementation that govern the use of components of biodiversity to ensure the sustainability of such uses.

The Fourth Open-ended Workshop for the Sustainable Use of Biological Diversity in 2003 saw the development of a set of fourteen practical principles and operational guidelines for the sustainable use of biodiversity. These were subsequently forwarded to the Seventh Meeting of the Conference of the Parties (COP 7) in February 2004 where they were adopted.

Building on the outcome of the Addis Ababa workshop, the Conference of the Parties to the CBD requested the Executive Secretary to undertake further work on issues pertaining to use, of terms for sustainable use, adaptive management, monitoring and indicators and to convene a series of technical experts workshops on ecosystem services assessment, financial costs and benefits associated with conservation of biodiversity, and sustainable use of biological resources (Anon., 2004b).

The principles provide a framework to assist governments, resource managers, indigenous and local communities, the private sector and other stakeholders on how to ensure that their use of the components of biodiversity will not lead to the long-term decline of biological diversity. The principles are intended to be of general relevance, though not all principles will apply equally to all situations, nor will they apply with equal rigour.

While these guidelines are very general and, like the Bonn guidelines, do not strictly qualify as trade-related measures, their merit lies in their long-term assimilation and impact on the development of national and possibly regional or international laws and agreements or measures. The following Principles are relevant to the trade in NWFP.

Practical Principle 3: International, national policies, laws and regulations that distort markets which contribute to habitat degradation or otherwise generate perverse incentives that undermine conservation and sustainable use of biodiversity, should be identified and removed or mitigated.

Practical Principle 12: The needs of indigenous and local communities who live with and are affected by the use and conservation of biological diversity, along with their contributions to its conservation and sustainable use, should be reflected in the equitable distribution of the benefits from the use of those resources.

Recognition within CITES of the Sustainable Use Guidelines

CITES Res. Conf. 13.2 titled: *Sustainable Use of Biodiversity: Addis Ababa Principles and Guidelines* notes the potential use by CITES of the Sustainable Use Principles in CITES Article IV implementation and recognizes that the principles are to be tested through case studies. The Resolution urges parties to make use of the principles in making non-detriment findings.

5.1.2.3 United Nations Framework Convention on Climate Change

Although forests may play an important role in the international response to climate change, Parties to the United Nations Framework Convention on Climate Change (FCC) have often reached different conclusions regarding the proper role of forests and appropriate national legislation to foster that role. To date, national legislative activity (including trade-related provisions) on the issue of forests and climate change has been limited and Countries have relied more on the creative use of existing legislation than the creation of new legislation.

Under the FCC, the international community is committed to reducing net greenhouse gas emissions. The Kyoto Protocol to the FCC entered into force on 16 February 2005 and gives Parties listed in Annex I of the Protocol (mostly developed countries and countries with economies in transition) specific reduction targets. They can meet these targets by reducing emissions or by promoting carbon sinks and the reductions can be accomplished domestically or through cooperative actions involving other Parties to the Convention. The potential link to NWFP lies in the opportunities created through the Kyoto protocol for forest conservation and accordingly then to NWFP conservation (Rosenbaum *et al*, 2004).

5.1.2.4 The International Tropical Timber Agreement

The International Tropical Timber Agreement (ITTA) was adopted on 26 January 1994, being the successor agreement to the ITTA, 1983, which was adopted on 18 November 1983. The 1994 agreement entered into force on 1 January 1997 for an initial period of four years which has twice been extended, the latter extension period due to end on 31 December 2006. A successor agreement to ITTA, 1994 is currently being negotiated (Anon., 2003b). There are currently 58 members (Belgium and Luxembourg occupying a joint membership), comprising 32 producing and 26 consuming members, including the European Community. The agreement is open to any state that produces or consumes tropical timber, and to intergovernmental organizations having responsibilities in respect of the negotiation, conclusion, and application of international agreements. The members represent 90 per cent of world trade in tropical timber and over 75 per cent of the world's tropical forests (Anon., 2005c).

The International Tropical Timber Organization (ITTO), established by the ITTA, 1983, administers the provisions and supervises the operation of this Agreement. It has the following mission statement: 'The ITTO facilitates discussion, consultation and international co-operation on issues relating to the international trade and utilization of tropical timber and the sustainable management of its resource base. Among its objectives are:

- to provide an effective framework for consultation, international co-operation, and policy development among all members with regard to all relevant aspects of the world timber economy;
- to provide a forum for consultation to promote non-discriminatory timber trade practices;
- to contribute to the process of sustainable development;
- to encourage members to support and develop industrial tropical timber reforestation and forest management activities as well as rehabilitation of degraded forest land, with due regard for the interest of local communities dependent on forest resources; and,
- to encourage members to develop national policies aimed at sustainable utilization and conservation of timber-producing forests and their genetic resources and at maintaining the ecological balance in the regions concerned, in the context of tropical timber trade.

The ITTO has adopted a number of policy guidance documents but it has been criticized for not having the mechanisms for ensuring that there is some follow-through on these policy pronouncements at the national level. For example, no country has yet enforced any of the ITTO guidelines. In addition, proposals for the ITTC to adopt resolutions which call for respecting livelihoods of forest dwelling peoples have consistently failed, although the ITTA calls for forest management activities ‘with due regard for the interests of local communities dependant on forest resources’.

Thus, although the ITTO helps enhance trade in tropical timber, and works towards enhancing conservation, its actual impact on helping to alleviate poverty is not likely to be significant (Tarasofsky, 2003).

5.1.2.5 The Southern African Development Community Forestry Protocol

The Southern African Development Community (SADC) Protocol on Forestry is a regional policy framework that aims to foster cooperation in forestry and provide a common vision and approach to the management of the region’s forest resources. All but three SADC countries (Botswana, Mozambique and Namibia) signed the Protocol in October 2002 and ratification is yet to be completed.

The Protocol is aimed at promoting sustainable forest management and trade in forest products, consistent with the Forest Principles adopted at the United Nations Conference on Environment and Development (UNCED) and the Proposals for Action of the Intergovernmental Forum on Forests (IFF)/Intergovernmental Panel on Forests (IPF)/United Nations Forum on Forests (UNFF) process. For easy alignment with national policies and legislation, the protocol was designed to be compatible with international initiatives such as the United Nations Convention to Combat Desertification, the Convention on Biological Diversity and the United Nations Framework Convention on Climate Change, to which all SADC member countries are signatories (Anon, 2004c).

While there are very few specific provisions dealing with NWFP, Article 12, on community-based forest management, requires State Parties to adopt national policies and mechanisms to enable local people and communities to benefit collectively from the use of forest resources and to ensure their effective participation in forest management activities. And, importantly, Article 18 on industry, trade and investment notes that State Parties which have substantial forest-based industries within their territories, shall:

- support the expansion of sustainable markets and sustainable trade in forest products throughout the Region; and
- develop, in accordance with international trade rules, a binding system of harmonised trade regulations that:
 - a) reduces or eliminates intra-regional barriers to trade in forest products in accordance with the Protocol on Trade; and
 - b) establishes harmonised standards for international trade in forest products from sustainably managed forests, including sanitary and phytosanitary standards relating to imported, exported and internally marketed forest products in accordance with sanitary and phytosanitary measures and standards and technical regulations on trade, as contained in the Protocol on Trade

State Parties are also required to develop specific product standards for wood and non-wood forest products, wherever appropriate to promote trade in forest products from sustainably managed forests in the Region, establish mechanisms for transboundary co-operation in enforcing controls concerning illegal trade in forest products, and adopt and apply appropriate measures to restrict or eliminate trade in protected tree species.

The SADC protocol accordingly offers a significant policy basis and set of commitments within the SADC region for the development of national-level legislation that could be of potential benefit to the conservation and sustainable use of NWFP.

5.1.2.6 The Association of Southeast-Asian Nations Statement on CITES

The Association of Southeast-Asian Nations (ASEAN) Statement on CITES on the Occasion of the Thirteenth Meeting of the Conference of the Parties to CITES, Bangkok was announced on October 11 2004. It focuses on six key areas of cooperation, including improved law enforcement cooperation, development of comprehensive legal frameworks, and increased scientific information to guide wildlife trade management by CITES authorities. The 10 ASEAN nations agreed to develop an action plan for 2005-2010. The agreement aims to further promote regional cooperation through the establishment of bilateral and multilateral arrangements between enforcement agencies responsible for common boundaries, to achieve more effective control of illegal international trade in wild fauna and flora and their products. The potential thus exists for the ASEAN statement to ultimately develop into a trade-related instrument as well as spur further specific trade-related agreements, which would include components on NWFP.

5.1.2.7 The Treaty of Amazon Co-operation

The Treaty of Amazon Co-operation (TCA), between Bolivia, Brazil, Colombia, Ecuador, Guyana, Peru, Surinam and Venezuela was signed on July 3 1978. The main objective of this treaty is to promote the harmonious development of the Amazon territory, exploring equal and mutually profitable results while preserving the environment, and promoting the rational use of the natural resources of the region.

It is expected that an institution will be created in terms of the Treaty in order to manage Treaty implementation and facilitate the generation of benefits to its members in the medium term, through the rational use of natural resources. It is anticipated that some of these benefits would be linked to the trade in NWFP.

5.2 National Measures

Both tariff as well as non-tariff instruments are applicable to the international trade in NWFP and are applied by both importing and exporting countries for a variety of purposes. Tariffs, safety regulations and technical standards are the most common restrictions imposed by developed countries on the import of NWFP. Developing countries, being the major suppliers of NWFP to world markets, can also impose measures which either restrict or regulate the export of NWFP, with the most common form being an export tariff. Generally such tariffs are not for protection purposes since the final products concerned are not found or manufactured there. Tariffs into developing countries are comparatively much higher and are generally for protectionist purposes (Iqbal, 1993).

Iqbal (1993) notes that as far as non-tariff measures are concerned, species protection controls and health and safety regulations are the main categories of measures applicable to both the export and import of NWFPs. A number of these are described below:

Health and safety regulations: For NWFP this normally means Phytosanitary certificates and is specifically relevant to medicinal plants. The intention of health and safety regulations is to protect human and environmental health.

Quality and Technical standards: An example with respect to medicinal products is the European Commission, which has unified its standards into European Pharmacopoeia. For edible products, this would include regulatory measures on food hygiene and food labeling. Iqbal (1993) notes that national food legislation is the most formidable and usual obstacle to trade in related NWFP. For essential oils, the most widely recognized quality and trading standards are those set up by the International Standards Organization (ISO).

Species Protection Controls: These include national measures such as bans, quotas and import and export controls based on the level of threat faced by species concerned.

5.2.1 Export Controls

5.2.1.1 Non-tariff export measures

Non-tariff export measures include species conservation controls and health and safety regulations.

Prunus africana, a large evergreen tree that grows in the afro-montane of Africa, produces one of the most highly commercialized NWFP from Cameroon with an increasing international commercial value, namely its bark. The bark of the tree is valued for medicinal purposes but over-harvesting of the bark, primarily from the wild, has had a devastating effect on wild populations of the species. Despite an official ban on *Prunus africana* exploitation in 1991, which was lifted in 1992, a greater quantity (3 900 tons) of *Prunus africana* was harvested and exported between 1991 and 1992 than in any preceding year, indicating the high level of corruption in the production zone (Cunningham et al, 1997). It is not clear whether the ban was merely ineffective or whether it stimulated trade.

The following breakdown of documents required for the export of NWFP from Bolivia demonstrates the bureaucratic hurdles that must be overcome by NWFP exported based in Bolivia:

- Commercial invoice of the merchandise
- Registration of the company by the Department of Forestry
- Copies of the Register of exporters or a Declaration of export
- Packing list
- Declaration of Export
- Conformity declaration
- Document of Transport
- Sanitary certificates issued by SENASAG
- Certificate of Origin

A number of those directly affect the trade of Brazil nuts, both in positive and negative ways. For instance the Conformity declaration requires that in order to obtain a refund of national taxes on an exported product or when the country of destination requires verification of origin, the exporter, at a cost, requests the Exporters Bureau System, for this service. This office then provides a declaration of Conformity once it has checked the quantity, quality and value of the merchandise to be exported. Sanitary certificates are issued by the competent authority that certifies to certify that the product is in good condition and meets appropriate food health standards. Despite the fact that Brazil nuts are a major export product for Bolivia, export-side sanitary certifications are a trade constraint due to delays in the issuing of certificates which cause subsequent export delays. While this has benefited medium and large companies small co-operatives and local communities continue to face export delays (Anon., in prep).

The procedure of the sanitary certificates is not easy especially for those cases of less known products, as in the case of Caiman skins and meat, and the list of requirements required to obtain the certificate can be very long and difficult to complete (Anon., in prep.).

5.2.1.2 Export tariffs

Export tariffs are commonly levied on many NWFP exported from developing countries with their main objective being to secure revenue for the State. Excessive tax rates are counter-productive as they encourage illegal trade in the products to avoid the export tariff and reduce the price paid to collectors and harvesters (Iqbal, 1993).

In the situation of gum Arabic *Acacia Senegal*, the income of the farmers is reduced because of high taxation of gum Arabic by the Sudanese state authority. Thus, stimulation of destructive and unsustainable strategies is based mainly on the impact of government price policy on farm households. Taxation policy has also had a negative impact on the provision of direct and indirect benefits from gum Arabic production and may lead to increasing desertification (Pretzsch, 2003).

5.2.2 Import Controls

5.2.2.1 Non-tariff import measures

National level import controls can prove restrictive. For instance certain US regulations require wildlife to be imported through only certain ports and that no wildlife may be imported through postal services. This has been cited as an obstacle for small-scale insect retailers (Slone *et al*, 1997).

Trade controls related to wild plants and animals, and particularly animal species, can be complex and overlapping, resulting in confusion regarding their interpretation. For example, although national and CITES trade controls have permitted the export of the wool and wool products of *Vicuna Vicugna vicugna* from Peru and Chile since 1995, until recently imports into the USA, a CITES member country, were banned under the US Endangered Species Act. This has proved to be a serious constraint on the *Vicuna* programme in Peru (Lichenstein *et al*, 2002). Similar confusion applies to the trade in butterflies. A leaflet from Australia's Queensland Museum notes that even though butterflies traded through the IFTA may be legally obtained as tourist souvenirs within Papua New Guinea, imports into Australia are prohibited and such butterflies are regularly confiscated by the Australian customs authorities (Monteith, 2000).

In Thailand the Commodities Division in the Ministry of Commerce prepares a list of NWFP for which import is prohibited. Any species or product not on the list is importable, though this requires a permit. The list of prohibited imports may be influenced by what is produced in Thailand to protect these industries. Certain products, such as charcoal and rattan, can be imported but not exported (Anon., 2001a).

Vietnam is a source of illegal NWFP, a consumer, and a route for illegal trade in wild plants and animals from Cambodia and Lao PDR, much of which flows to China. Whilst several legal instruments regulate the export of timber and NWFP, there is limited legislation on the regulation of imports. The minimal regulation of imports is considered a major deficiency of the current regulatory system. The profusion of regulations creates a burden on enforcement personnel and exporters alike, which in turn tends to encourage a search for means to avoid compliance. Overlapping classifications of timber and NWFP also creates conflicts that can be exploited for noncompliance (Anon., 2001a).

Brazil nut trade controls

In the case of Brazil nut initiatives in Peru and Brazil, the 1998 European Community regulation decreasing acceptable levels of aflatoxins was considered a serious threat to market access (Newing and Harrop, 2000). These regulations require all Brazil nut consignments exported to Europe to be accompanied by a certificate stating their origin and all nuts must be tested. The trade in the nut, which is a symbol of Brazil, is worth approximately US\$ 3.3 million per year (Anon., 2003c). Sanctions imposed by the European Commission on the importation of Brazil nuts in their shells, due to the presence of a fungus thought to be carcinogenic, effectively brought an end to the export of the product to Europe as the Brazilian government and the private sector lacked the minimum infrastructure to meet the European standards.

The pressure of the EU regulations was a key factor in the development in Bolivia in 2001 of specific legislation on agricultural and food safety and sanitation, which makes provision for the establishment of an institution, the National Service of Agricultural and Food Safety and Sanitation, SENASAG. Specific regulations for Brazil nuts were approved on February 2001, which contain certification and sampling procedures for Brazil nuts, in accordance with EU regulations. Unfortunately, the process is not recognised by the EU authorities and sampling and analysis in European markets of Brazil nuts produced in Bolivia, is still required (Anon., in prep).

5.2.2.2 Import tariffs

In general the import tariffs on NWFP are quite low. This is due to the fact that key international markets for NWFP, developed countries, do not in general produce the NWFP and there is accordingly not a need to introduce measures protecting local producers. Further, developed countries tend to maintain low tariffs in order to ensure a sustained supply of the products to meet domestic demands. Tariffs on NWFP into developing countries are often significantly higher due to the frequent need to protect local producers (Iqbal, 1993).

5.3 Voluntary measures: Certification and eco-labeling

Non-timber forest resources are a more difficult group of products to certify than timber due to a multitude of factors, including their exceedingly diverse and idiosyncratic nature and social and ecological complexity. However, in spite of these challenges, opportunities exist to promote sound ecological and social practices in NWFP management and trade through market tools such as certification (Shanley *et al.*, 2002).

Certification requires a high level of organization and technical sophistication from producers, especially with regard to management planning, monitoring, product tracing and marketing. The level of organization and sophistication required by certification programmes, not to mention their costs, will prevent most NWFP harvesters around the world from participating in certification initiatives unless they have access to sustained technical and financial assistance (Shanley *et al.*, 2002)

The scope for certification of NWFP is accordingly limited to a small number of formalized, internationally traded products/species and in these cases it may be a potentially useful tool.

Certification is defined by the International Organization for Standardization (ISO, 1996) as: “*a procedure by which written assurance is given that a product, process or service is in conformity with certain standards*” (Walter *et al.* 2003a). There are four main certification schemes that can be applied to NWFP: Forest management, social (Fair and ethical trade), organic and product quality certification (Walter 2002).

Organic certification may be applicable to both cultivated and wild-harvested medicinal plants and has most frequently been applied to plants used in food and beverages, such as herbal teas, herbs and spices. The International Federation of Organic Agriculture Movements (IFOAM), an NGO, and regional and national governments such as those of the European Union, the USA and Japan are among the major players globally in organic certification.

Fair trade certification for plant products is currently concerned almost exclusively with handicrafts, tea, fruits, nuts and other plant products that are not normally consumed primarily for medicinal purposes. The main purpose of this type of certification is to achieve social goals, e.g. to improve the position of poor and marginalized producers in the developing world. Fairtrade Labeling Organizations International (FLO), an NGO, is the main international body developing and certifying compliance with "fair trade" criteria. FLO lists 18 national initiatives, members of FLO authorized to certify products as meeting FLO standards and award the FLO logo. The International Fair Trade Association (IFAT) is another important global network of fair trade organizations. It supports and works closely with FLO.

The main demand for certified forest products comes from parts of Western Europe and the US with most of the demand is from retailers rather than the end consumer (Vantomme and Walter, 2002), although this may vary for certain products.

The International Organization for Standardization (ISO), a widely recognized international standardization body, also establishes quality standards. ISO standards with a bearing on medicinal plants include the ISO 9000 series (for management systems) and the ISO 14000 series (for environmental management).

Certification and labeling schemes have focused mainly on timber products and certification of NWFP has only been available under systems such as the FSC for the last half a decade (Pierce *et al*, 2003). It is accordingly very difficult to judge the performance of certification for NWFP due to the lack of case studies and available information. Existing literature and case studies do, however, point to some trends and future challenges for certification of NWFP.

The FSC states NWFP can be FSC certified when coming from (FSC) certified forests and when NWFP specific standards are used. These standards can be developed – based on a national and regional consultation process – by FSC-certified bodies or national (FSC) standard working groups. To date, seven FSC certificates have been issued for NWFP (Forest Stewardship Council, 2002):

- Chicle (*Manilkara zapota*) as ingredient in chewing gum, certified in Mexico in April 1999 by SmartWood;
- Maple syrup (*Acer saccharum*) as food product (sweet syrup), certified in the USA in August 1999 by SmartWood;
- Açai palm hearts and fruits (*Euterpe oleracea*) as food product and beverage, certified in Brazil in November 2000 (see also Donovan, 2000) by SmartWood;
- Brazil nuts (*Bertholletia excelsa*) as food product, certified in Peru in October 2001 by SmartWood and in Bolivia in March 2002;
- 30 plant species as ingredients in cosmetics in Brazil in October 2001 (see also Rainforest Alliance, 2003) by SmartWood;
- Venison (*Cervus elaphus*) as food product (bushmeat) in Scotland in May 2002 by SGS; and
- Oak tree bark (*Quercus robur*) as incense, certified in Denmark in July 2002 by the Soil Association.

Work on NWFP certification according to FSC standards is in progress regarding the certification of bamboo and rubber (by SKAL International) in India, maté (*Ilex paraguayensis*), palm hearts (*Euterpeedulis*), piacaca (*Attalea funifera*) in Brazil (by IMAFLORA), berries in Russia (by Soil Association) and Eucalyptus in Chile (by SGS-UK). Furthermore, in Brazil several projects are implemented to achieve certification for plants used as ingredients in cosmetics and phytoterapics (Forest Stewardship Council, 2002; pers. comm. P. Goeltenboth, WWF Germany, 23.03.2001).

In light of the fact that there is little information regarding NWFP certification the FAO has undertaken a number of case studies, which have some important conclusions. Walter *et al*, (2003a) carried out case studies of Brazil nuts *Bertholletia excelsa* in Bolivia, sheabutter *Vitellaria paradoxa* in Ghana and devil's claw *Harpagophytum spp.* in Namibia.

Brazil nuts

Only two out of 24 existing processing plants in Bolivia sell organically certified nuts, with some of these being destined for the fair trade market. The largest Brazil nut exporting company in Bolivia is in the process of certification for ISO 9000-2000 standards and HACCP, and is also exploring international accreditation for its laboratory. The Bolivian Council for the Voluntary Forest Certification (CFV) affiliated to the Forest Stewardship Council (FSC) has prepared the Bolivian standards for the certification of Brazil nuts and other NWFP (Anon., in prep.). So far only Brazil nuts have been approved and are subject to a FSC green certificate upon compliance. Certification is accordingly in its infancy for Brazil nuts but may grow as producers become more interested in the higher prices paid for certified products. The FSC standards developed for Brazil nuts and accepted in Bolivia in March 2002, include both forest management standards and social standards.

FSC forest management principles and criteria for Brazil nuts

At this moment, the largest threat to the forests and to Brazil nut production is not the actual harvesting of the Brazil nuts but rather forest degradation caused by other land use practises (Shanley *et al*, 2002). Therefore, in the case of Brazil nuts, forest management certification is not aiming in the first place on changing the current harvesting methods –though the FSC certification standards do include some criteria to make sure the extraction has no negative impact on the ecosystem or the future Brazil nut production- rather certification aims to promote sustainable forest management and protection of the forest from which the nuts are collected. The premium price paid for these certified nuts, give the forest from which they are collected an increased economic value making it more competitive with other, destructive, land-uses.

FSC social standards for Brazil nuts

Furthermore, from the information on its production it becomes clear that many different stakeholders are involved in its market chain; social certification is an appropriate tool to ensure all stakeholders to benefit from the brazil nut commercialisation. Therefore, the FSC standards include criteria aiming at maintaining or enhancing the economic and social welfare of collectors and local communities, and the protection of the rights of indigenous people and their knowledge. In 2001, the first Fair Trade labelled Brazil nuts were sold at the price of US\$ 0.58 / kg, being 153% of the conventional price paid that year per kg.

Sheabutter

Sheabutter is mainly used in the food industry although there is a growing demand for it for cosmetics and pharmaceutical products. While there are only a small number of producers of certified sheabutter there is a large demand, and thus a potentially large market for this product. The start up costs and

time required for organic certification as well as product traceability would be a challenge to overcome and would require the involvement of outside funding or partners to become involved.

Devil's claw

There is only a very small supply of organically certified devil's claw thus far and social certification systems such as fair trade have not, in general, been widely recognized by consumers of species for medicinal purposes even though some initiatives have shown positive results for harvesters. There are some concerns over the sustainability of the harvesting of devil's claw, due to the fact that the tubers of the plant must be harvested.

The following are key issues and challenges with regards to NWFP certification: traceability, tenure rights, rural livelihood/empowerment, market potential, costs, harvesting and mainstreaming. It is also important to note that in some cases the resource is being harvested sustainably anyway and certification may make no differences. However, in cases such as devil's claw, certification may in fact promote a more sustainable way of harvesting (Walter *et al*, 2003a or b?). There is also a lack of ecological information about NWFP life-cycles, reproduction, density and distribution. Forest criteria may be too timber orientated, forest management assessors are not trained in managing and assessing NWFP, and there is also a need for integration of timber and non-timber production and recognition of the role of NWFP in rural livelihoods (Pierce *et al*, 2003).

Other Certification and Eco-labeling Initiatives

Aside from certification by large certifying bodies, there have been other initiatives that address similar issues, often for products that fall outside of existing categories. One example is the 'Commercial Products from the Wild Consortium', established in 1998 in Southern Africa. This was a development project essentially set up to ensure the sustainable utilization of indigenous plants for economic development. Some of their initiatives and projects enabled harvesters who were illegally harvesting bark in the Umzimkulu indigenous forest, to become licensed harvesters. This was done by creating access to the forest and ensuring sustainable harvesting, to ensure both plant survival and the harvesters livelihoods.

PhytoTrade (previously called SanProta) is a non-profit trade association that helps African rural producers develop and market their natural products for export. PhytoTrade promotes sustainable production and fair trade, aiming to contribute to the economic development of southern African countries. Phytotrade operates in Botswana, Malawi, Namibia, Zambia and Zimbabwe. Although this is not a certification body the association has a Fair Trade charter which members have to follow, similar to a code of ethics.

Bolsa Amazonia is a regional programme operating in Bolivia, Brazil, Columbia and Ecuador aimed at the commercialisation of sustainable Amazonian products by involving rural communities and empowering them with capacity building and information. There are a number of communities involved for a variety of Amazonian products such as coconut fibre and Acai palm.

NWFP are probably not ideal for certification programmes as the products are often traded on a small scale in local markets. Where they are traded internationally it is often for a specific industry and also on a relatively small scale. Only some of the more popular products would be suitable e.g. palm hearts, bamboo, rattan and some medicinal plants. Certification can be done on a case by case basis but it is difficult to say how useful it is for such a wide group of products that are included in NWFP.

Box 4: Certifying Certification: Can certification secure a sustainable future for medicinal plants, harvesters and consumers in India?

India is home to an amazing diversity of plants, with over 46 000 plant species recorded to occur there. Many of these species are used for medicinal purposes, with approximately 760 known to be harvested from the wild for use by India's large herbal medicine industry. There is concern, however, that collection methods for many, if not most, of these species are destructive and wild populations are declining as a result.

Many medicinal plant species in India occur in forest areas and, along with other non-timber forest products (NWFP), fall within the scope of certification schemes aimed at sustainable forest management'

Numerous standards have been developed for assessing and ensuring the quality of medicinal plants (raw materials), their processing and end products. For example, in India, Good Manufacturing Practices (GMP), required under a 2000 amendment to *India's Drug and Cosmetic Act, 1940*, are aimed at ensuring quality control in the making of products from medicinal plants.

While there is some independent certification of fair trade and organic standards for medicinal plants in India, this is largely restricted to teas and other plant products more usually associated with the mainstream food and beverage industry.

Assessment of current practices for medicinal plant harvests and trade, which derive from a long tradition within India, indicate that, even if the market conditions were ripe for third-party certification, the complex, informal and often opportunistic nature of the trade would not be conducive to it. Comparison of practices for collection and trade of medicinal plants in India with NWFP management requirements according to FSC Principles and criteria revealed a wide gap between current management approaches, harvest and trade and FSC-type standards.

Experiments to measure management of selected medicinal plants - high-value species, traded in high volumes, nationally and internationally - against some key international standards and criteria for forest management should be undertaken in some forest management divisions, particularly in States like Chattisgarh and Uttaranchal, which have declared themselves "herbal States". Similar assessments should be made with regard to third party chain of custody, organic, fair trade and quality certification, with a view toward measuring progress toward international targets and, possibly, the eventual setting of national standards. A review should also be made of the potential for group certification of small cultivators (Jain, 2004).

Even when it involves exchange uses, the most striking feature of NWFP subsistence practices is their location outside of the formal market. It is precisely this position that makes NWFP a continuously viable resource for individuals who are let down by the market. The return to their labour has immediate survival benefits. Where products have not entered the intensive commodity market, there is minimal competition for the resource and little or no investment is required beyond time and effort. Certification programmes introduced to such areas run the risk of introducing the contradictions between market processes and subsistence uses of NWFP to the detriment of the latter.

However, where NWFP have been heavily commoditised, market process may already jeopardize subsistence uses and appropriately designed certification programmes might be used to provide some protection for them. There may be opportunities for certification programmes to do so when focused upon products that have long-standing exchange value and do not have a traditionally important use value where they are harvested.

Timber Certification and NWFP

Certification of timber may be helpful to NWFP, for example, andiroba oil *Carapa guianensis* which is one of the most popularly consumed medicinal in urban and rural areas of Amazonia. Heavily logged, its numbers are declining, prohibiting its use by many rural villagers who depend on it as an insect repellent and remedy for bruises, sprains and rheumatism. Uxi *Endopeura uchi* is a tree bearing a distinctly flavoured fruit utilised in the cream and juice industries. Eluding domestication, it is still largely gathered from wild sources and its value as a timber species has seen its decline in particular regions. These and many other fruit and medicinal oil species are not only important for their nutrition and health care of the rural and urban poor but may also offer a greater economic value standing than cut down. While NWFP are mentioned in the FSC principles, the concept is not elaborated upon.

Timber Certification and Bushmeat Trade

The knock-on effects of sustainable forestry, for example through FSC certification, could be that governments in developing countries, in dialogue with bilateral donors, might start to see the potential for sustained income generation and other social benefits from NWFP, such as bushmeat. If this led to longer contracts on concessions this could favour companies operating under good practice-guidelines. Ultimately, it might spark changes to in-country governmental regulation of concession allocation (Bowen-Jones, 2003).

Chain of custody in Certification

Chain of custody requires that forestry operations have tracking systems in order to ensure that products offered for sale come from well managed forests and that certified products are not mixed with non certified products on their way to the market. This is easier for goods that are physically large and also where they do not come from numerous sites. There are methods to ensure that the chain of custody does not have weak points but it is very difficult for some NWFP such as Brazil nuts which are traded in bulk as commodities. There are technical ways of addressing this through e.g. different packaging and transport options and this has been done by FSC, Fairtrade and Organic (Shanley *et al*, 2002).

Certification has room to improve its technical assessment procedures for NWFP. It remains to be seen how certification will handle more challenging products such as epiphytes, mushrooms and primary forest herbs, particularly when such products are harvested from public lands (Shanley *et al*, 2002).

NWFP are not inherently ideal for certification – they are mostly consumed locally at a subsistence level, are traded locally and regionally and most are not featured in markets open to green or fair trade messages. Only in a few exceptional cases do NWFP find their way into international markets that may be receptive to eco-labeling – such as the luxury food, medicinal herb and floral trades (Shanley *et al*, 2002)

6. POLICIES, PROCESSES, GUIDELINES AND INITIATIVES IMPACTING ON TRADE IN NWFP

This Chapter deals with laws, policies, processes, guidelines and initiatives that can not be described as trade related instruments, but which nevertheless have some impact on the development of such measures. These policy initiatives, while not legal instruments, form part of and help to shape the environment within which the trade in NWFP takes place. Consumer boycotts or campaigns, for instance, are not trade-related instruments but if successful can lead to the development of such instruments. It serves to highlight differences between law and policy but also the clear process links between the two and the impact, for instance, that international policy can have on national legislation or regional agreements.

6.1 International policies and processes

6.1.1 The Rio Declaration and the Forest Principles

The Rio Declaration on Environment and Development Chapter 1 on combating deforestation and other relevant Chapters of Agenda 21, and the Non-legally Binding Authoritative Statement of Principles for a Global Consensus on the Management, Conservation and Development of All Types of Forests (the Forest Principles) provide a holistic framework for addressing issues relating to the world's forests including the relationship between trade and sustainable forest management.

Guidance on the issue of trade as provided by the framework of the United Nations Conference on Environment and Development includes the following:

- Trade policy measures for environmental purposes should not constitute a means of arbitrary or unjustifiable discrimination or a disguised restriction on international trade (Rio Declaration, Principle 12)
- Trade in forest products should be based on non-discriminatory and multilaterally agreed rules and procedures consistent with international trade law and practices. In this context open and free trade in forest products should be facilitated (Forest Principles 13(a)).
- Reduction or removal of tariff barriers and impediments to the provision of better market access and better prices for higher value added forest products and their local processing should be encouraged (Forest Principles 13(b)).
- Unilateral measures, incompatible with international obligations or agreements, to restrict and/or ban international trade in timber or other forest products should be removed or avoided, in order to attain long-term sustainable forest management (Forest Principles 14).

Source: Anon., (2002)

6.1.2 Millennium Development Goals

Poverty eradication and the reversal of environmental degradation are two of the greatest global challenges. These challenges are inextricably linked and are reflected in the Millennium Development Goals (MDGs) adopted at the Millennium Summit in September 2000 (Anon., 2002). United Nations bodies, international organizations and civil society are therefore committed to assisting country strategies in achieving these goals. The World Summit on Sustainable Development (WSSD), held in Johannesburg in 2002, reaffirmed the MDGs and clearly established the link between poverty and ecosystem management. As a result, national, regional and international development policies are increasingly becoming aligned towards ensuring that efforts and assistance target both these goals (Anon. 2002).

MDGs relevant to the trade in NWFP are:

- **Goal 1** To eradicate extreme poverty and hunger.
Target for 2015: Halve the proportion of people living on less than a dollar a day and those who suffer from hunger.
- **Goal 7** To ensure environmental sustainability.
Targets: integrate the principles of sustainable development into country policies and programmes and reverse the loss of environmental resources
- **Goal 8** To develop a global partnership for development.
Targets: develop further an open trading and financial system that includes a commitment to good governance, development and poverty reduction, nationally and internationally; address the least developed countries' special needs and the special needs of landlocked and small island developing States.

6.1.3 World Summit on Sustainable Development

The World Summit on Sustainable Development, held in 2002, conducted a ten-year review of UNCED commitments to sustainable development. The two main outcomes of the summit were the Johannesburg Declaration on Sustainable Development and the Johannesburg Plan of Implementation.

The Plan of Implementation emphasizes that sustainable development depends on the eradication of poverty, changes to unsustainable patterns of production and consumption, and the protection and management of natural resources. It notes that sound national policies, democratic institutions, good governance, ethics and international cooperation are critical factors in the integration of economic, social and environmental dimensions of sustainable development. In addition, the plan specifically calls for action to foster development in Africa and highlights the challenges that globalization poses to sustainable development. A number of global targets were agreed,

WSSD and forests

The Plan of Implementation recognizes sustainable forest management as essential to achieving sustainable development and as a critical means for eradicating poverty, reducing deforestation, halting the loss of forest biological diversity, improving food security and increasing access to safe drinking-water and affordable energy. It calls for action to:

- support UNFF, with the assistance of CPF;
- accelerate implementation of the IPF/IFF proposals for action;
- improve domestic forest law enforcement and efforts to combat illegal international trade in forest products;
- address the needs of the poorest regions, which suffer the highest rates of deforestation;
- support capacity building for sustainable forest management;
- support indigenous and community-based forest management systems;
- implement the CBD expanded Programme of Work on Forest Biological Diversity.

(Source: Anon., 2003d)

6.1.4 Criteria and Indicators

Criteria and indicators were developed in response to countries' demands for practical ways of assessing and monitoring sustainable forest management at the national level and as benchmarks to measure and report progress towards sustainability. They were developed as tools for assessing

national trends in forest conditions and forest management. The criteria define the essential elements or principles against which sustainability is judged, and the indicators help policy-makers and forest managers monitor the effects of forest management over time (Anon., 2001b). Together they provide a common framework for describing, monitoring and evaluating progress towards sustainable forest management (Anon., 1999b).

Intergovernmental organizations and agencies as well as numerous international and national non-governmental organizations (NGOs) are supporting the nine major international criteria and indicators processes, which involve nearly 150 countries and 85 per cent of the world's forests (Anon., 2003d). The initiatives include ITTO's criteria for sustainable management of tropical forests; the Pan-European Process on Criteria and Indicators for Sustainable Forest Management (the "Helsinki Process"); the Montreal Process on Criteria and Indicators for the Conservation and Sustainable Management of Temperate and Boreal Forests Outside of Europe; the Tarapoto Proposal for Criteria and Indicators for Sustainability of the Amazon Forest; the Dry-Zone Africa Process; the Near East Process; the Lepaterique Process of Central America; the Regional Initiative for Dry Forests in Asia; and ATO's identification and testing of criteria and indicators for sustainable forest management in its member countries. Criteria of all the international, regional and national processes and initiatives centre around seven globally agreed elements of criteria for sustainable forest management. There is, therefore, the potential for convergence or mutual recognition, so that over time a common global approach may be used to assess sustainable forest management (Anon., 2001b).

Stakeholders at the international, regional, national and sub-national levels increasingly acknowledge the importance of applying criteria and indicators for sustainable forest management as tools to monitor the effects of intervention and to assess progress over time.

While criteria and indicators can not be described as trade-related measures, related criteria and indicators can be used to support the development of trade-related instruments that contribute to sustainable use and rural upliftment.

6.2 National Forest Sector Policy and Legislation

6.2.1 Logging bans

A number of Asian countries have imposed total or partial logging bans or similar restrictions on timber harvesting in response to the rapid decline of natural forests. FAO implemented a study of 'the Efficacy of Removing Natural Forests from Timber Production as a Strategy for Conserving Forests' based on a request from the Seventeenth Session of the Asia-Pacific Forestry Commission. The study, based on a number of country case studies reveals a complex and variable mix of symptomatic reasons of imposing logging bans and restrictions on harvesting in natural forests. Among the other concerns noted in the case studies are the loss of biodiversity, critical habitats and representative forest systems; conflicts with rights and cultural traditions of indigenous peoples and communities and conflicts with management of important non-timber forest products, including medicinal plants and forest genetic resources.

The study notes that bans on timber harvesting provide only a possible first step in ameliorating the present symptoms of forest management failures. Timber harvest restrictions and harvest bans alone seldom correct underlying problems of misuse and unsustainable natural forest management and conventional harvesting. Without an adequate framework of supporting conservation and protection policy and appropriate management capacity, the closing of forests that have been open for both traditional community use and commercial harvesting imposes inequities and hardships. A number of

principles, potentially of use in securing the successful use of logging bans as a strategy for forest conservation, emerge from the study. Of relevance to the trade in NWFP, they are:

- That safety nets should be provided for individuals, communities and institutions that are disadvantaged by policy changes, accompanied by strategies for creating new self-sustaining opportunities for the future; and
- Recognition and understanding of local dependency on natural forests for both wood and NWFP is needed and local people must be actively involved in forest management decision-making (Anon, 2000b).

The effectiveness of log export ban and prohibitive export tax is also greatly reduced in contexts where unsustainable forestry is mainly driven by the domestic market and the national economic and policy environment. An FAO report (Brown *et al.* 2002) concluded that while the bans have in some cases resulted in domestic conservation and tree planting benefits, these countries have greatly increased their legal and illegal timber imports from neighbouring countries. Therefore, the host country benefits need to be balanced against the environmental (including NWFP) and governance impacts in neighbouring countries. Country-specific studies could help with better understanding the associated economic and environmental trade-offs in different contexts.

6.2.2 Forest Sector Subsidies

Subsidies, are common in the forest sector to promote timber production, reforestation and investments in natural and planted forest management where returns are too low to attract private financing (Schmidt, 2003). They are also used for strategic reasons, for example to build sufficient wood supply to encourage processing ventures. In terms of trade policy, financial subsidies to promote production particularly influence the competitiveness of individual producers, although such incentives often result in excessive harvesting and are a concern to governments and some segments of society (ITTO, 2003). Excessive harvesting of timber may, in certain cases, have a negative impact on NWFP use and trade.

6.2.3 Decentralisation of Management of Forests

Since the early 1990's, an increasing number of governments at the provincial, regional and local levels, in at least 60 developing countries, have been taking on the role of managing national forests previously controlled by national departments. Thus far, results have been mixed with forests benefiting in certain cases, but in other cases not (Anon., 2004a).

6.3 Other National Policy and Legislation

6.3.1 Public Procurement Policies

Several countries, such as the UK, Germany, France and Denmark are in the process of developing government procurement rules with reference to legal and sustainable suppliers of wood. Government procurement policy could be used to give preference to legally produced timber, which would require adhering to a standard that offers chain-of-custody certification. These rules would increase the demand for certified wood, because the public sector provides an important market for tropical timber in many countries. Government procurement is dealt with under the WTO Government Procurement Agreement (GPA), which is based on the principle of non-discrimination between like products from foreign and domestic suppliers. Article XXIII allows an exception to this on the grounds of protection of human, animal and plant life (Katila, M. and Simula, M., 2004).

NWFP are not purchased in sufficiently large quantities by governments and are accordingly unlikely to be impacted by or fall within the ambit of public procurement policies. There may though be indirect benefits through public procurement policies aimed at ensuring sustainable forest management.

6.3.2 Environmental Impact Assessments

Environmental Impact Assessments (EIAs) are used almost exclusively to assess the impact of infrastructural development and land-use change on the environment rather than the environmental or socio-economic impact of harvesting and extraction for international trade purposes. There are examples where EIAs have been required of traders wishing to import NWFP, for instance the import of Ball pythons from Ghana into South Africa for the pet trade, in order to assess their potential impact on indigenous flora and fauna.

6.4 Civil Society/Private Sector Initiatives

6.4.1 The Corporate Social Responsibility Movement and Product Promotion Campaigns and Boycotts

The European Commission's Employment and Social Affairs Committee defines Corporate Social Responsibility (CSR) as a concept whereby companies integrate social and environmental concerns in their business operations and in their interaction with their stakeholders on a voluntary basis (Anon., 2005d). There is a large consensus on its main features:

- CSR is behaviour by businesses over and above their legal requirements, voluntarily adopted because businesses deem it to be in their long-term interest.
- CSR is intrinsically linked to the concept of sustainable development - businesses need to integrate the economic, social and environmental impact in their operations.
- CSR is not an optional 'add-on' to business core activities - but about the way in which businesses are managed.

There are very few examples of NWFP that have been specific targets of campaigns or boycotts. Initiatives set up by private companies such as The Body Shop are a reflection of corporate social responsibility. This particular example is a well known one, whereby the company buys products, frequently NWFP, directly from rural communities according to a set of social and environmental principles and standards, and in this manner attempts to ensure both environmental sustainability and community upliftment.

A NWFP-related campaign ongoing in 2005 is aimed at encouraging the wine industry to continue using cork rather than screw-caps for sealing wine bottles. The campaign aims to save the cork oak forests from degradation and disappearance and also highlights the fact that many people generate an income through the harvesting of cork.

7. CONCLUSIONS

There are a broad range of trade-related instruments that impact on the trade in NWFP. These instruments vary considerably in their approach, their overarching aim, their implementation and the extent to which they achieve their objective. Unlike the two key traded biodiversity resources, timber and marine products, NWFP are traded in comparatively much smaller quantities and are not as valuable, in monetary terms, even when considered as a single commodity grouping. Because of this, considerations on the impact of trade measures on NWFP, and associated livelihoods, are not placed as high on the agenda as they are for similar impacts related to timber and marine products. This can be seen in related debates and decisions within the WTO and regional trade and biodiversity agreements, in the provisions of national import and export control measures, and in the development of certification schemes.

It was perhaps only within CITES that we find a trade-related instrument that has the structure and mechanisms to deal with the complexities of NWFP trade. However, CITES only regulates a very small percentage of traded NWFP and this analysis demonstrates that the imposition of CITES trade controls does not necessarily result in a win-win situation for the species concerned and those generating an income from the trade.

NWFP also face practical challenges – there are, for instance, numerous different NWFP, far more than for timber or marine products and they are often small in size and come from many different sites – and they are, accordingly, far more complex and difficult to understand and regulate, as they can not be successfully regulated as a single or uniform commodity.

It is clear, however, that NWFP play a critical role in the lives of millions of people around the world and that trade-related instruments do have an impact, both positive and negative, on the sustainable use and conservation of NWFP and the livelihoods of those dependant on them. Resource users, regulators, non-governmental organizations, policy-makers and all other stakeholders accordingly need to continue emphasizing the important role of NWFP and advocating for the adoption of trade-related measures that are supportive of their conservation and sustainable use.

As the following more specific conclusions are brief, reference is made, at the end of each conclusion, to the sections in the report where the conclusion can be contextualised.

- Trade liberalization appears to benefit forest-export orientated developed countries more than developing countries. However those developing countries with considerable forest resources should benefit economically from trade liberalization (5.1.1.1).
- Trade liberalization can help improve forest governance and support movement towards sustainable forest management. Conversely, it can also have a negative impact by boosting illegal activities or expanding the economic harvesting area (5.1.1.1).
- Insufficient literature exists on the current and potential impact of regional trade agreements on the conservation and sustainable use of NWFP (5.1.1.2; 5.1.1.3; 5.1.1.4).
- The Bonn Guidelines on Access and Benefit Sharing are being incorporated into national policy and legislation and have the potential to support a more equitable distribution of benefits arising from the trade in certain NWFP (5.1.2.2).

- Regional agreements and initiatives (such as the SADC Forestry Protocol and the ASEAN Statement on CITES) dealing with biodiversity conservation appear to offer significant opportunities for the development of national-level trade-related measures that could benefit NWFP conservation and use (5.1.2.3; 5.1.2.4).
- In certain cases, where Phytosanitary certificates are required for export purposes, such measures become a trade constraint as they cause delays and are particularly onerous on small cooperatives and local communities. However, where related NWFP are destined for markets in developed countries, such certificates are necessary to ensure access to these markets, which generally have strict Phytosanitary standards that must be met (5.2.1.1).
- Excessive tax rates are counter-productive as they encourage illegal trade in the products to avoid the export tariff and reduce the price paid to collectors and harvesters (5.2.1.2).
- Non-tariff national level import controls can prove restrictive as well as complex and overlapping, resulting in confusion regarding their interpretation. This creates a burden on both enforcement personnel as well as traders and creates a regulatory environment that is open to exploitation (5.2.2.1).
- Certification and labeling schemes have focused mainly on timber products and certification of NWFP has only been available in forest-related certification schemes for the last half decade. It is accordingly very difficult to judge the performance of certification for NWFP due to the lack of case studies and available information (5.3.1).
- NWFP are probably not ideal for certification programmes as the products are often traded on a small scale in local markets and where they are traded internationally it is often for a specific industry and also on a relatively small scale. Accordingly only some of the more popular products are suitable for certification and it should be done on a case by case basis (5.3.1).
- Where products have not entered the intensive commodity market, there is minimal competition for the resource and little or no investment is required beyond time and effort. Certification programmes introduced to such areas run the risk of introducing the contradictions between market processes and subsistence uses of NWFP to the detriment of the latter. However, where NWFP have been heavily commoditised, market process may already jeopardize subsistence uses and appropriately designed certification programmes might be used to provide some protection for them (5.3.1).
- Bans on timber harvesting provide only a possible first step in ameliorating the present symptoms of forest management failures. Timber harvest restrictions and harvest bans alone seldom correct underlying problems of misuse, unsustainable forest management and conventional harvesting. Without an adequate framework of supporting conservation and protection policy and appropriate management capacity, the closing of forests that have been open for both traditional community use and commercial harvesting imposes inequities and hardships (6.2.1).

8. RECOMMENDATIONS, INCLUDING PROPOSED AREAS FOR FURTHER RESEARCH

- Trade related and other measures aimed at enhancing the sustainable trade in NWFP and contributing towards sustainable livelihoods should incorporate and reflect recent research on the role and potential of NWFP in livelihood strategies (3.2).
- Policy-makers and other stakeholders should be guided by recent research indicating the limited potential for NWFP commercialization and trade to be effective as a tool for biodiversity conservation (3.2).
- Stakeholders should continue to monitor current negotiations on the relationship between existing WTO rules and specific trade obligations set out in multi-lateral environmental agreements, promote the sustainable use of NWFP in appropriate WTO related for and discourage the adoption of provisions that may have a negative impact on NWFP conservation and associated livelihoods (5.1.1.1).
- In order to make CITES a better tool for sustainable development there is a need to make sure that CITES decisions are based on socio-economic as well as biological information through increasing awareness of livelihoods issues within the 'CITES community'; including socio-economic information in the supporting statements for CITES proposals; ensuring that consumer decisions are based on livelihood as well as conservation concerns by increasing consumer awareness that the listing of a species in CITES is not necessarily a sign that it is threatened, and is not equal to a trade ban; and, exploring the potential to link CITES trade controls with certification schemes or other trade-related measures (5.1.2.1).
- It is necessary to ensure that learning resulting from research on community-based wildlife management and NWFP development is brought into and informs decisions taken regarding the international wildlife trade in order to increase the potential for achieving conservation and development aims (5.1.2.1).
- NWFP certification programmes should only be used to facilitate the entry into competitive commodity markets when focused upon products that have long-standing exchange value and do not have a traditionally important use value where they are harvested (5.3.1).
- Where timber bans are being considered as a regulatory measure, country benefits need to be balanced against the environmental (including NWFP) and governance impacts in neighbouring countries. Country-specific studies could help with better understanding the associated economic and environmental trade-offs in different contexts (6.2.1).
- Further research should be conducted into the impact (both current and potential) of international and regional trade agreements, on the trade in NWFP (5.1.1).
- Further research should be conducted into the impact of regional and bilateral biodiversity-related agreements to determine the extent to which they impact on NWFP, and to explore opportunities for encouraging the adoption, at a national level, of associated trade measures (5.1.2).
- Existing literature on the impact of national level tariff and non-tariff controls, in particular the impact of phytosanitary and quality measures, should be updated (5.2).

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Annex A

Potential policy areas in which to explore the application of trade-related instruments to international trade in NWFP

1. Public policy instruments and governance processes affecting forest trade at the national level

- National forest strategies and programmes
- Logging bans
- Forest sector subsidies
- Forest resource tenure
- Forest decentralisation
- Forest resource allocation policies
- Regulations on forest management
- Policies on forest resource development
- Support for downstream processing of forest products
- Government policies to promote forest environmental services
- Environmental Impact Assessment
- Criteria and Indicators

2. Public policy instruments and processes at the international level

- Inter-governmental policies and processes
 - International forest processes (IPF/IFF/UNFF process, Criteria and indicators)
 - Multilateral environmental agreements (International Tropical Timber Agreement, Convention on International Trade in Endangered Species of Wild Fauna and Flora, Convention on Biological Diversity, Kyoto Protocol)
 - Normative functions and finance for development
 - Regional processes to control illegal logging
- Regional trade agreements
 - Africa
 - Asia-Pacific
 - Europe
 - North America
 - Latin America
- WTO and the Doha Development Agenda
 - Market access for non-agricultural products
 - Trade and Environment
 - Implementation Issues
 - Agriculture
 - The Doha outcome for forestry
- Other international institutions with mandates related to trade

3. Market-based instruments

- Initiatives relating to international business
- Certification and labelling schemes
- Supply-chain management
- Product promotion campaigns/boycotts
- Environmental management systems (e.g. ISO 14001)
- The corporate social responsibility 'movement'
- Socially responsible investment (e.g. 'green' pension funds)
- Increasing environmental liability (insurance)
- Public procurement

Annex B

National Analysis of Trade-Related Instruments Influencing Trade in Brazil nuts (*Bertholletia excelsa*) and Caimans (*Caiman yacare*): Applications and Impacts on Poverty Alleviation and Sustainable Forest Management in Bolivia

Prepared for The Food and Agriculture Organization of the United Nations (FAO)
Non-Wood Forest Products Programme

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Acronyms

ABAN	Asociación de Beneficiadoras de Almendra del Noroeste (North-western Brazil nut Beneficiadoras Association)
AGRECO	Kontrollstelle für ökologische Lebensmittel und Naturwaren
AOPEB	Asociación de Organizaciones de Productores Ecológicos de Bolivia (Association of Organisation of Ecological Producers)
Bolicert	Boliviana de Certificación
BOLFOR	Programa de Manejo Forestal Sostenible
CAIC	Cooperativa Agrícola Integral El Campesino
CDB	Convenio sobre Diversidad Biológica
CEDLA	Centro de Estudios para el Desarrollo laboral y agrario
CESO/SACO	Canadian volunteer cooperation
CFV	Consejo Boliviano para la Certificación Forestal Voluntaria (Bolivian Council for the Voluntary Forest Certification)
CIFOR	Centre for International Forestry Research
CIOEC	Comité Integrador de Organizaciones Económicas Campesinas de Bolivia
CUMAT	Capacidad de Uso Mayor de la Tierra
DIPO	Danish Import Promotion Office
EEC	European Economic Community
EU	European Union
FAO	Food and Agricultural Organisation of the United Nations
FLO	Fair Trade Labelling Organisation
FOB	Free on Board
FOBOMADE	Foro Boliviano sobre Medio Ambiente y Desarrollo
FSC	Forest Stewardship Council
GDP	Gross Domestic Product
GTZ	Deutsche Gesellschaft für Technische Zusammenarbeit
HACCP	Hazard Analysis Control Point
IBCE	Instituto Boliviano de Comercio Exterior
IBNORCA I	Instituto Boliviano de Normalización y Calidad (Bolivian Quality and Normalisation Institute)
IMO	Control Institut für Markökologie, Kontroll- und Zertifizierungsstelle im Ökologischen Landbau
IFOAM	International Federation of Organic Agriculture Movements
INE	Instituto Nacional de Estadísticas (National Statistics Institute)
ITC	International Trade Centre
ISO	International Standard Organisation
JETRO	Japan External Trade Organisation
JNA	Japan Nut Association
LDC	Less Developed Countries
MERCOSUR	Mercado Común del Sur (South America Common trade market)
MDSP	Ministerio de Desarrollo Sostenible y Planificación (Ministry of Sustainable Development and Planning)
NWFP	Non-Wood Forest Products
NOP	National Organic Program
OSEC	Swiss Office for Trade Promotion
PROMAB	Programa Manejo de Bosques de la Amazonía Boliviana
SENASAG	Servicio Nacional de Seguridad Agrícola y Ganadería (Agriculture and Cattle Raising Security National Service)
UDAPE	Unidad de Análisis de Políticas Económicas

Executive Summary

- ❖ This paper aims to clarify how trade-related instruments that influence the supply chain of commercialised Non Wood Forest Products (NWFPs), are impacting on sustainable forest management (SFM) and rural livelihoods in Bolivia. This impact is analysed for two Bolivian NWFPs with an international market, namely Brazil nuts and Caimans. This study forms part of a global programme of FAO, intended to promote the use of NWFPs as a means to reduce poverty.
- ❖ The first NWFP analysed is Brazil nut (*Bertholletia excelsa*). This is the most important NWFP in Bolivia for its share in the exports for the past ten years; comprising 2% of the total national exports and giving the country a first place in the world ranking of producers and exporters of Brazil nuts.
- ❖ The second NWFP analysed is caiman (*Caiman yacare*), a recently commercialised NWFP, joining the Bolivian Biodiversity business only 4 years ago.
- ❖ Brazil nut is a prosperous sector with over 15.000 persons directly employed along its supply chain, which brought forth an export value of US\$ 54 mln in the year 2004.
- ❖ The recognition in 1996 of indigenous communities and local farmers as social groups with the right to utilise natural resources, accredited with documentations granted by the Bolivian government, has strengthened the position of these forest dependant communities. They have been enabled to sell the accredited Brazil nuts for better prices, realising a more equal distribution of benefits along the Brazil nut supply chain. However, those people in the beginning of the supply chain which are not organised in social groups, eg local farmers and migrants, receive the smallest share of the profit while having the toughest working and living conditions.
- ❖ One of the major difficulties for the Brazil nut sector is to meet the strict EU regulation regarding aflatoxins (a toxic fungal compound). The Bolivian Government is trying to enforce a certification process to guarantee the production for export to meet the requirements set by the EU regulations.
- ❖ For the moment, only the largest companies are able to meet international standards, such as those set by certification bodies as ISO 9000 or HACCP, enabling them to sell their organically certified products on international markets. However, a good experience of certification for products coming from local communities was obtained by a co-operative that reached a fair trade market in Italy, with a 33% premium price over the regular international price.
- ❖ Caiman is a species traditionally used by local communities. However from 1990 to 1998 a total ban stopped its utilisation. After several studies on the caiman population dynamics, the possibility of the rational utilization of caiman was determined and gradual authorisations for harvesting of skins and later also for meat for export was approved.
- ❖ Since caiman was a new product, no specific regulations were defined for its use in neither the international environmental treaties nor the local cattle raising service SENSAG. This made it difficult to local communities to get benefits from the trade in caiman skins, even when legally approved.
- ❖ Being one of the CITES (Appendix II) species, caiman requires special permits for hunting and commercialisation. So far, quotas for this product have not been exceeded, thus reaching the expected equilibrium between preservation of the species and gaining economical benefits from its sustainable use.

- ❖ Forest regime systems have changed forest users' mind set towards sustainable development. All the mandatory steps i.e. planning and management, make possible a good traceability of the use of NWFP. Certificates of origin are required for local and international commercialisation. This is an important step if companies or local communities want to have international environmental certifications.
- ❖ The current export accreditations granted by the Bolivian government, even though complex and some times difficult to fulfil by local communities, assist the producers to fulfill all the local and international requirements, such as environmental compliance of the Bolivian Forest Law or international agreements such as CITES, guaranteeing that Bolivian exports took all the necessary steps.
- ❖ Certification of product or process quality or environmental management can form a barrier to small companies or local communities. However, if they are reached, new market niches, some times with higher prices are accessed. With specific support this barrier can become in to a benefit for local communities.
- ❖ Some multilateral environmental agreements, such as CITES, are enabling the rational use of some species, such as caiman, of which hunting before was banned. This enables local communities to receive benefits from natural resources without over-exploiting them.

1. Introduction

This study is a contribution to the Norway Partnership Programme (NPP) “Forests for Sustainable Livelihoods (FNOP/INT/004/NOR) carried out under the FAO’s Programme “Promotion and Development of Non-Wood Forest Products (NWFP)”. This program aims at improving the sustainable extraction of NWFP in order to contribute to the wise management of the world's forests, to conserve their biodiversity, and to improve income-generation and food security.

Though many authors see the potential of NWFP extraction to fulfil this mutual goal of poverty alleviation and sustainable forest management, some case studies tend to describe NWFPs not to be appropriate tools for poverty alleviation. An example is given by the conclusion drawn by Neumann and Hirsch (2000 in Marshall et al, 2003), who do find NWFPs to provide a basic level of income for the poorest forest dependent communities, but conclude they do not offer a structural socio-economic advancement for these people.

This document intends to look at i) whether or not NWFPs contribute to poverty reduction and SFM in Bolivia at this moment, ii) whether they have the potential to reach these combined goals in the future, iii) in what way trade related instruments can influence the NWFP chain of custody and iv) whether these trade related instruments can contribute to the realisation of these goals. In this way, the NPP component 3 “Trade in NWFP – Options for Poverty Alleviation” intends to explain i) the impact of trade in NWFP on local livelihoods and on the state of the forests from which they are extracted and ii) the applicability of relevant trade-related instruments as adequate policy tools to promote and develop sustainable NWFP extraction and assuring the commercialisation results in the equal distribution of the benefits amongst the stakeholders involved.

This component has different phases in a four year period, beginning with an overall analysis - of which this document forms part- of how trade, poverty and the state of forests are related. The analysis includes a local assessment and global analysis of trade-related instruments and will as a result provide policy recommendations for the sound application of trade-related instruments aiming at NWFP.

In this paper, two NWFP were selected as case studies, namely Brazil nuts (*Bertholletia excelsa*) and Jacaré or Caiman (*Caiman yacare*) to whom the above mentioned analyses are applied. These two very different products are thought to give a good overview of how trade-related instruments influence trade, rural livelihoods and SFM.

The first case study concerns Brazil Nuts, the most important NWFP in Bolivia in terms of contribution to the economy, which is already being exported for over 15 years. The second case study concerns caimans, a rather new export product since its exploitation used to be prohibited until recently. This case study gives an interesting example of a change in the Bolivian Government policy regarding the use of natural resources. The government’s approval of the exploitation of the species at sustainable levels forms part of its strategy in the fight against poverty.

2. Methodology

In addition to a desk study where most of the available literature was reviewed, interviews with Government related offices were carried out. The purpose of these interviews was to double check the validity of the information gained from the desk study concerning legal instruments affecting both positively and negatively the trade in the two selected NWFP. It was also intended to learn more about new policies and practices.

An important finding, both during the interviews and the document research, was the different amount of information available concerning Brazil nuts and caimans. As mentioned previously, Brazil nuts are the most important internationally commercialised NWFP. This has motivated the government, non-governmental organisations, the private sector and others to focus on Brazil nuts in researches and the formulation of Brazil nut specific legislations. To the contrary, very little legislation and research documents can be found on the caiman. For example, even though the export of both caiman leather and meat has become important, it does not have a specific tariff code.

3. Overview of the trade in NWFP and the contribution to livelihoods in the country

In this section a general overview is provided of the Bolivian natural resources and the contribution of non wood forest products (NWFP) to local forest dependent communities and the national economy.

3.1 Bolivian forests

Bolivia has a surface of 57.315.600 ha of natural forest (the area of plantations is negligible), which is 48% of the national territory. The Bolivian forest consists of 10% of the total humid and sub-humid tropical forests in South America. The forest types vary from dry leaf-shedding forests of the Chaco region to the evergreen tropical lowland forests of the Amazon and flooded plains of Beni.

Two periods mark the history of the Bolivian culture for extraction of wood and NWFP. The first period concerns the forest regime based on the law of 1974. Under this regime permission was granted to 180 companies to commercially exploit a forested area of 22.000.000 ha (20% of the national territory). Under the new forest regime (law of 1996) this surface has decreased to 5.477.728 ha (5% of the national territory) which is being exploited under the concession scheme by approximately 80 companies. Of the granted surface, 50,8% is located in the Department of Santa Cruz and 28% in Pando. This new regime is based on a SFM model. This model is based on three key elements: i) the economic benefits coming from forest resources, ii) these benefits are equally distributed amongst the different stakeholders involved: companies, intermediaries and social groups of indigenous communities and local farmers and iii) the natural resources are exploited according to sustainable levels, maintaining the resources for future generations.

It is calculated that the tropical forests of Bolivia contains around 1.412 millions m³ of wood. The potential exploitable volume differs per forest type varying from 3 to 30 m³/ha, but the actual extraction is not higher than 12m³ since the profits for low price wood species do not weigh up against the high transportation costs. So far logging has been mainly concentrated in five costly species: Mara (*Swietenia macrophylla*), Cedar (*Cedrela spp.*), Ochoo (*Ura crepitans*), Palo María (*Calophyllum sp.*) and Roble (*Amburana cearensis*) that together represent about 60% of the total timber harvest.

Besides the timber production, Bolivian forests offer a range of NWFPs and environmental services, of which many are not quantified. For many communities, the forest is indispensable for living, offering them food, fruits, meat, material for construction and even sacred places (Bojanic, 2002).

3.2 Bolivian Forest Economy

The contribution of the forest sector to the Bolivian economy consists of an approximate mean annual value of US\$ 220 mln over the last 10 years, comprising about 1% of the Bolivian GDP (HIB Latinoamerica 2003). Wood products exports in the last 5 years have been worth about US\$ 120 millions annually, being 11% of the total exports from the country, with a gradual trend switching from raw material to processed products.

Wood and non wood forest products together employ over 50.000 people, representing approximately 4% of the economically active population. Out of these, 40.000 are employed in the wood sector and 10.000 are employed in the NWFP sector (BOJANIC, 2002).

3.3 Non Wood Forest Products in Bolivia

Bolivian forests are abundant in non wood forest products (NWFP). NWFPs have been used by native communities since ancient times, making a major contribution to their livelihoods.

The two commercially most important NWFPs for Bolivia are Brazil nuts (*Bertholletia excelsa*) and Palm heart (*Euterpe precatoria*). Brazil nuts comprise 91% of the value of NWFP exports. The most important markets for this product are in the UK, the US, and Holland, where over the last 5 years the average annual quantity of 20,000 tons was exported with the mean value of US\$ 30 million. Palm heart exports have decreased from US\$ 12 million (8.000 tons) in 1996 to less than US\$ 4 million (2.500 tons) in the 2001 (UDAPE, 2002). The figures of palm heart reveal a strong market uncertainty. This can be explained by declines in international prices together with restrictions imposed by international (mainly European) importers on exporting countries. The economy of Brazil nuts has observed low prices in last two years because of over-supply. Additionally the European Union has imposed measures based on aflatoxins³, requiring improvements in the harvesting and production processes to reduce the incidence of the disease.

Table 1. Export of Brazil nut and Palm heart from Bolivia

Description	Export (US\$) 2003	Share of total export 2003	Export (US\$) 2004	Share of total export 2004
Brazil nut	31.023.544	2,41%	53.360.000	3,07%
Palm heart	2.465.523	0,19%	3.826.512	0,22%

Source: IBCE; INE; UDAPE, 2005

³ Aflatoxins are toxic components produced by two *Aspergillus* fungus, further details can be found on 4.1.3 Note on Aflatoxins and non tariff Barriers for Brazil nuts

4. Overview of the trade in Brazil nut and Caimans

4.1 Case Study 1. Brazil nut (*Bertholletia excelsa*)

4.1.1 Overview

Brazil nuts, locally called "Castaña", are harvested throughout the lowland Amazon and are an important source of income for the local people. The nuts grow inside a large grapefruit-sized pod, arranged like the segments of an orange, with approximately 12 seeds per pod.

The Brazil nut sector is considered the most important bio-business in economic terms in Bolivia. Together with Brazil nuts (*Bertholletia excelsa*), other nuts and seeds like for example almonds are harvested by the rural population and the local industry.

The most exported NWFP of Bolivia are Brazil nuts, which have already been exported for more than 15 years. Around 99% of the total production Brazil nuts is exported (Bojanic, 2002). In the period January-November 2004 an amount of Brazil nuts with the value of US\$ 54 million has been exported. The export of Brazil nuts represents 2,5% of the overall national exports and 45% of the exported forest products (IBCE, 2004). The Brazil nut supply chain provides direct employment to 15.000 persons (Paz Soldán, 2003). This contribution to the Bolivian economy is a result of the product's competitiveness in international markets; since 1996 Bolivia is the number one exporter world-wide of Brazil nuts (CAEM, 1996).

Exports of Brazil nuts have been a common practice since the beginning of the last century. The value of the exports enabled Bolivia to become the first supplier world-wide.

Bolivian Brazil nut is produced naturally in the Departments of Pando and Beni. This area, together with some areas in Brazil and Peru, is unique in the world for the occurrence of *Bertholletia excelsa* in its natural state, and holds the highest quality and yield of Brazil nuts. 70% of the world production is in Bolivia, 20% in Brazil and 10% in Peru⁴. Brazil began to export this product earlier than Bolivia, giving the international commercial name to this product. They exported it as raw material, without processing it. The forests where Brazil nuts occur have been partly subject to a deforestation process. In Peru little attention was paid to this product, and only in recent years the economic importance is being noticed. In Bolivia natural rubber (*Hevea brasiliensis*) producers started to harvest and process Brazil nuts since the beginning of the century. When artificial rubber replaced the natural product and the rubber producers left the forest, a culture of Brazil nut collection was already established. Despite the difficulties caused by lack of infrastructure and tough working conditions, the extraction of Brazil nuts is very popular and there exists a high world-wide competitiveness for its production.

Brazil nuts are eaten in its natural form, but they also have the potential to be processed, mainly into essential oils for the cosmetics industry. This last use has not been developed on a national scale. The main obstacle for an expansion in the products development is its market, regarding quantitative and qualitative aspects, and the level of aflatoxins, a toxic fungal substance. (A more detailed description on this issue can be found in chapter 4.1.3).

4.1.2 Description of the Brazil nut supply chain

As Paz Soldan (2003) stated there are four important stakeholders in the Brazil nut supply chain:

⁴ III Congress of Amazonian Countries (2004)

- The harvesters (zafreros): peasants and indians from Pando who live in the Amazon forest, with a very rudimentary collecting technology.
- The intermediaries (contratistas): informal intermediaries between processors and concessions.
- The concession holders (barracas): concessions are administrative units for the exploitation of brazil nuts which vary in size. A process of vertical integration has been observed in which ownership of barracas has been transferred to the processing plants.
- The processors (beneficiadoras): industrial plants where brazil nuts are processed for export, providing employment for 2 500 nut crackers, 4 000 helpers, 650 permanent manufacturing workers and 1 300 temporary workers.

Table 2. Number of persons involved in the different activities of the Brazil nut supply chain

Stakeholders	1997	1998	1999	2000	2001	2002
Harvesting	10.000	9.200	9.000	9.800	10.000	12.000
Harvesters	9.300	8.556	8.370	8.330	8.500	8.400
Peasants	500	460	450	980	1.000	2.400
Indians	200	184	180	490	500	1.200
Storage	350	270	267	260	250	250
Concession holders	300	200	175	172	165	165
Intermediaries	50	70	92	88	85	85
Processing	6.735	6.730	7.031	7.231	7.222	7.726
Plant Owners	25	25	23	23	22	22
Nut Crackers	6.500	6.500	6.800	7.000	7.000	7.500
Employees	150	145	145	145	140	140
Technicians	60	60	63	63	60	64
Transport	1.420	1.420	1.320	1.320	1.523	1.540
Land Transporter	150	150	165	165	180	180
River Transporter	70	70	55	55	63	60
Helpers	1.200	1.200	1.100	1.100	1.280	1.300
Commercialization	72	73	60	60	60	110
Transporters	60	63	50	50	50	100
Employees	12	10	10	10	10	10
Total job positions	18.557	17.693	17.678	18.671	19.055	21.626

Source: INE, IPHAE in situ visits

4.1.3 Aflatoxins and non-tariff Barriers for Brazil nuts

Quality, regarding Brazil nuts and international markets, is mainly related to the maximum level of permissible aflatoxins, a toxic fungal substance, according to the regulations of consumer countries. Once producers overcome this obstacle, national offer could be increased with an immediate response since at the moment the capacity used reaches less than 50%.

Aflatoxins are produced by two fungi, *Aspergillus flavus* and *Aspergillus paraséticus*. Contamination can occur before and after harvesting when the fruit is penetrated by the fungus' spores. This occurs under conditions of high humidity (80% and more) and higher temperatures (mainly between 25 to 30 °C. The higher the temperature the larger aflatoxins content is observed. The highest risk of infection is when the fruit lies on the forest floor or during the storage. There are no artificial environment facilities, where aflatoxins occurrence would be lower.

There are 4 aflatoxins types, of which the most common one is type B1 aflatoxins, which can even be found in the ground and in the air. It is known that these biochemical products have toxic effects to humans and are presumed to provoke cancer. The main negative effects are alterations and

deformations of the reproductive system, immunology system, liver, gastrointestinal system and breathing system.

European standards requires that the maximum content of aflatoxins in Brazil nut is 4 ppb (parts per billion) and, specifically for type B1 it shouldn't be over 2 ppb, while in the USA a maximum content 10 ppb. With the reduction of these limits, regulations have become stricter and therefore a threat for producers and exporters of this product arises (Candela Peru et al, 2004).

4.2 Case Study 2. Caiman (*Caiman yacare*)

4.2.1 Overview

Latin America is the richest area in species of crocodilians, compared to any other area in the world; twelve taxa (including subspecies), occur from Mexico to Argentina. The vast area of humid lands and immense river systems provide an extensive habitat for caimans and crocodiles, being the reason for the large number of these animals in the region, though the exact number is not known (Messel et. al 1995). This situation causes that the crocodilians represent a resource of considerable ecological value and with a great economic potential (Pacheco, 1996).

Latin America has also supported the greatest hunting operations of crocodilians in the world. Historically, this hunting was carried out for the international trade in skins causing a serious decline and local extinction of some species. In the 1990's, the region provided half of the skins of crocodilians world-wide (Messel et al., 1995). The loss of habitat and hunting continues, being a risk for the survival of several species. However, a basic change in the tendency of conservation of these species around the world, including Latin America, has been observed: international controls are implemented restricting the trade of wild life and improved management programs for conservation are set-up, generating some optimism with respect to the future of caimans and crocodiles (Ross 1995).

The adoption of strategies for the sustainable use of crocodilians has provided new incentives for the conservation of these species and their habitat (Messel et al, 1995). In Bolivia the development of a pilot program of sustainable use of the caiman started in 1995 with the program "Sustainable Utilisation of caiman in Bolivia" (King 1995), creating the basis for the adoption of the Regulation for the Conservation and Advantage of the caiman (*Caiman yacare*), in 1997. At the same time the General Biodiversity Direction (DGB), prepared the national program of conservation and sustainable use of the caimans in Bolivia, in which evaluation and monitoring of caiman population and other species of crocodilians was set.

4.2.2 Characteristics of the species

Caiman yacare known locally as lagarto (best translated as caiman), belongs to the family of Alligatoridae. It lives in in the surroundings of streams, lagoons and marshes in the forests of the departments of Beni, Santa Cruz, Pando, Cochabamba, La Paz and Tarija.

The adult males and females are dark coloured and are known as "black lizard"; and the young caimans have a yellowish colour and are known as "white lizard". Hunters, consider to the "black" and "whites" as different species. The commercial name in the international markets is "black yacare".

The nutrition regime of caiman consists mainly of crabs, shrimps and fish, though it also eats aquatic turtles, some birds and mammals up to the size of a deer. Reproduction takes place between August and November and the young caiman is born in December or January. The nests are constructed of vegetation and mud and the number of eggs varies in average from 23 to 41. Specific studies do not exist on the number of individuals born per reproduction cycle.

Different studies have determined an average in the length for this species as follows:

- Male overall length: 2,45 m, ventral longitude (determining the leather size) 1,225 m.
- Female overall length: 1,77 m, ventral longitude: 0,885 m.

The habitat of this species consists of moving waters for the "white yacare" and ponds for the "black yacare", in the borders of the Amazonian water bodies mainly. In times of abundance, they inhabited lakes, lagoons, wells, marshes and small streams in the plains and forests. Frequently they walk on land, crossing the drains when migrating from the great rivers to the different ponds.

The distribution of this Species in Bolivia occurs mainly as follows:

- Department of Santa Cruz: in the dampes of the Isosog, rivers: San Julian, Yapacani, Ichilo, San Martín and the Pantanal of Puerto Suárez.
- Department of Beni: along the rivers Mamore, Machupa, Beni and the Lagoons of Rogaguado and Rogagua.
- Department of Cochabamba: rivers of Chapare, Isiboro, Cajones.
- Department of Pando: in the rivers of Tahuamanu, Orthon, Madre de Díos.
- Department of La Paz: The affluent of the Beni River that enter the Department and Madidi River.
- Department of Tarija: South east of the Bermejo River

The main use of the great reptiles is found in the leather industry. However, in 2004 some export operations of meat of caiman started, both fresh meat vacuum sealed and dry meat "Charque de jacare", mainly to the markets of the United States, Japan and Italy where it is commercialised to restaurants of exotic food.

4.2.3 Technical base for the sustainable use of Caiman

Although some information from the 70's about the caiman in Bolivia is available (Donoso - Mud 1974, Iovisek 1977 and 1980), little importance was given to the conservation of caiman in the country (Pacheco 1996).

During the same decade the first inventory on great scale was carried out, and the results were published ten years later (Meden 1983), for the first time information on natural history caimans in Bolivia was available. The second concerted effort to compile information on great scale on the populations of the caimans was made in 1986, where, after six months of work, comparable data to that compiled by Meden on the distribution of the species and the state of some populations was available (King and Videz - Rock 1989).

As of that moment numerous works were made that offer to information on the population state of the *Cayman yacare* in diverse zones of the country like Beni, Santa Cruz and Cochabamba (Ruiz 1988, Videz - Roca 1987 and 1989, Ergueta and Pacheco 1990, Cow 1992, Pacheco 1993, Rebolledo Garin and Tapia-Arauz 1994, Llobet 1996, Llobet and Goitia 1997). The studies conducted in 1986 showed that although the species was practically exterminated in lagoons in some zones of Beni, in others was particularly abundant with densities from up to 70/km² (King and Videz - Rock 1989). A similar result was presented in Santa Cruz, where in some zones they were reported of very low densities (king Videz - Rock 1989, Ergueta and Pacheco 1990 Rebolledo - Garin and Tapia - Arauz 1994), whereas in others like the zone of San Matías, the observed aggregations (especially during the dry time) produced high density, similar to the reported in Venezuela (Pacheco and King 1995).

At the moment the species is in danger (Pacheco and Aparicio 1996). In this sense, it is necessary to remember that the population is under strong pressure of hunting in most of the area of its distribution (Pacheco 1996). According to the recovery of the populations of the caiman in the last years an old program of sustainable use of the species can be made as long as the conditions and the established quotas of harvest are respected (Llobet and Aparicio 1999).

5. Application of trade related instruments to the trade in NWFP

5.1 Trade-related instruments affecting Brazil nuts

5.1.1 Legal framework

Except for Brazil nuts, Palm heart and wild cocoa, trade of NWFP are not significant for the Bolivian exports. This holds also true when comparing local trading of NWFP, compared to wood commerce. The domestic market is small and the consumption is mainly in household, therefore there is no policy guiding their development.

Even though Forest Law 1700 and its regulatory Supreme Decree 24453 (both enacted in 1996) set the rules for production and extractive activities in the forests, little is mentioned about NWFP. This legal framework is based on two basic management tools: a Forest Management Plan (PMF) and a Forest Certificate of Origin (CEFOR). The first document allows extraction of forest products, and the second one is a permit for transportation and commercialisation within national territory.

Bojanic (2002) summarises the specific regulation regarding NWFP:

- Article 27 of the Forest Law 1700 points out the necessity of the management plan and a raw material supply plan that includes regulations on quantity and source of NWFP coming from the managed forest concessions that are already approved for wood extraction or from concessions exclusively defined for NWFPs. Only products listed in this plan can be commercialised. A detailed description of contents and information for filling out the plan, to be presented by extraction and trading companies of NWFP is defined in the Forest Technical Norm 134/97, (forms 5, 7 and 9) as well as the dispositions of the Forest Superintendence (SF) relative to the payment of patents for use of Brazil Nuts (*Bertholletia excelsa*).
- Article 83 of the forest law defines the Forest Management Plan (PMF) as essential for the commercial use of the NWFP in order to guarantee the sustainable production in terms of volume and harvesting method. The PMF includes the obligation of presenting the annual operative plans to the Forest Superintendence (SF). The SF is also in charge of monitoring the application of the PM and of sanctioning in case of non fulfilment.
- Article 69 of the regulation indicates that for local use of NWFP a PMF is not required, use and transport require SF or municipal special authorisations only.
- Article 31 of the Law indicates that forest concessions are to be granted to Local Social Groups (ASL) and indigenous communities (TCO) above other users.

One important element of the Bolivian legal framework for natural resources is that all the activities, from harvesting to commercialization, are required to have documentary support proving they have been extracted under sustainable management principles. Other than an important benefit for the environment and natural resources, companies and the other players have a good base for any international certification.

One of the disadvantages of the concession system is that companies are not interested in improving the production areas where they work, since all the product is already for harvesting. They hire non permanent personnel with daily payment, and not per volume harvested. This leaves an important volume left in the ground since no ownership feeling exists and consequently, productivity decreases.

With the inclusion of new players (i.e. indigenous communities and local social groups), a monopoly type of system was broken. Control of the production can also be carried out by communities independently and communities in association with concession holders. This enables a fair price negotiation with communities, though employment conditions remain the same.

Despite the improvements introduced by the new forest regime, living and employment conditions for harvesters have not improved.

Brazil nut is a product harvested from natural forest. Therefore, deforestation influences directly the quality and quantity of the Brazil nut production.

The harvester, who might be a native peasant or an immigrant from the Bolivian highlands, carries out his work with the help of his family. He does not have social security or a formal full time job with all the benefits. The product is sold by the individual farmer to intermediaries who fix the prices, with no chance to any negotiation. They have no access to information about local, regional, national or international prices.

The lack of commercial options for Brazil nuts forces the harvesters to give their products to the intermediaries (transporters and concession holders) for low prices or exchange them with food, medicines or other goods of first necessity.

5.1.2 National Standards for quality of products and processes

Bolivian Standards for Brazil nuts have been developed by The Bolivian Institute for Standardisation and Quality IBNORCA by the Supreme Decree 24498 of February 1997. This regulation defines the necessity of improving the certification process for Brazil nut exports under the Bolivian System of standardisation, certification, accreditation and metrology.

With the purpose of maintaining the country's status of first world producer and exporter of Brazil nuts, a National Brazil Nut Council was created by a Supreme Decree (DS) 25200, dated October 1998, and certification of these products became mandatory. So far this strategy supported the maintenance of Bolivia's first place in Brazil nuts exports, both in terms of volume and value. The DS is based on international market requirements, especially regarding aflatoxins as mentioned in 4.1.3. The amount of this toxic biochemical compound determines whether or not the product can enter the international market. Furthermore, there are other characteristics not included in the DS, such as size and packaging, which will affect the price (Paz Soldan, 2003). Later that year a new Decree 26081 was promulgated to improve the conditions of competitiveness of this product with special emphasis towards aflatoxins.

This last Supreme Decree demands that exported Brazil Nuts will have the certificates of quality emitted in accordance with the dispositions of this Supreme Ordinance conform the applicable national and international technical standards.

It is also required that certificates of quality for exports will be granted by legal bodies accredited by the Bolivian Organisation for Accreditation (OBA). To this moment, only SENASAG is accredited, thus being the only institution granting phyto-sanitary certificates to exporters. The main restriction in granting more certificates to exporters is the lack of capacity of potential accreditation institutions in fulfilling the requirements of the OBA.

The following standards were approved by special committees:

- NB 1015 dry Fruits – Almond, Amazon nuts and Brazil nuts - Classification and requirements, approved in May 2000 based on the Regulation CE 1525 / 98 indicating the maximum content of certain pollutants and toxins in nutritious products.
- NB 1016 dry Fruits - Code of good practices of hygiene for Almond (Amazon nuts - Brazil nuts), sent in May 2000. Among other documents, this standard was based on the Code of practical of hygiene for trees nuts.

- NB 1017 dry Fruits - Almond (Amazon nuts - Brazil nuts) - Sampling for the control of the aflatoxins content, May 2000. The bibliography of these standards are based on Annex I of the Directive 98 / 53 / CE.
- NB 1018 dry Fruits - Almond (Amazon nuts - Brazil nuts) - Preparation of samples and general requirements that should complete the analysis methods for the control of the aflatoxins content, May 2000 The bibliography of this standard is Annex II of the Directive 98 / 53 / CE; and the Directive 85 / 591 / EEC and 93 / 99 / EEC.

The following are the European Product Specifications for Brazil Nuts (Paz Soldan, 2003), used by the Bolivian Standardisation Institute, IBNORCA, for the above mentioned standards:

- a) Forms traded
 - Brazil nuts are traded mainly in kernel form. Good-shelled nuts are large, smooth and uniform in size with a creamy brown skin and a white inner heart.
- b) Grading
 - The grading of brazil nut is based on the number of nuts per pound weight. One pound (lb) = 454 grams. The accepted range of counts for in-shell brazil nuts per pound is 35/40 (extra large), 40/45 (large), 50/55 (extra medium), 57/62 (medium) and over 70 (small). For brazil nut kernels the counts are 90/110 (large), 110/130 (medium), 140/160 (small), 160/180 (midget) 180/220 (tiny). Chipped and broken kernels are also sold.
- c) Packaging
 - In-shell nuts are packed in bags of 50 lbs or 25 kgs. Shelled nuts are frequently packed in the same way as cashew nuts, in tins of 10 or 15 kg which are nitrogen-flushed before sealing. Airtight packaging is essential. Tin foil bags of 10 or 20 kg are also sometimes used.
- d) Specimen product specification
 - Brazil nut: shelled midget
- e) Count / sizes
 - 160 – 180 nuts per pound (454 grams)
- f) Quality specification
 - Broken nuts (<7/8 nuts) max. 4.0 percent
 - inclusive of nut parts (<1/4 nut) max. 1.5 percent
 - Damaged nuts max. 3.0 percent
 - Total defects may not exceed 5.0 percent
- g) Chemical specification
 - Free Fatty Acid (FFA) max. 0.5 percent
 - Aflatoxin_{B1} max. 4.0 ppb
 - Aflatoxin B1, B2, G1 and G2 max. 10.0 ppb
 - Moisture 1.5 – 3.0 percent
 - Peroxide value (PO) max. 1.0 meq 0.2 kg/fat
- h) Microbiological specification
 - Standard plate count max. 10 000 / g
 - Mold and yeasts max. 500 / g
 - Enterobacteriaceae max. 10 / g
 - E coli negative
 - Salmonella negative
- i) Organoleptic specification
 - Appearance: smooth and fresh looking shelled brazil nut
 - Colour: cream/brown; the heart is white
 - Taste: characteristic fresh taste of brazil nut, not rancid or old
 - Texture: strong, fresh, crispy
 - Odour: typical

In March 2000, Law 2061 concerning the specific Regime of Agricultural Sanity and Alimentary Safety was approved, creating the National Service of Agricultural Sanity and alimentary safety, SENASAG. The specific regulation for Brazil nuts was approved in February 2001, following the national Standards previously mentioned. By these regulations, SENASAG elaborated a certification and sampling procedure for Brazil nuts, in accordance with European Union regulations, and put into function LABCAR, a specialised laboratory in Riberalta.

SENASAG is the official certification body in charge of formulating relevant phyto and zoo-sanitary standards for the WTO. However, it is not recognised by the EU authorities, thus sampling and analysing of the Brazil nuts produced in Bolivia destined for European markets is still required.

SENASAG is a new institution facing different problems including budget restrictions and lack of professional staff. Procedures for certification on aflatoxins content in Brazil nut take a long time (several weeks) and the biochemical analysis is carried out at a private laboratory belonging to the Chamber of exporters of Northern Bolivia (CADEXNOR). Large companies foresee these bureaucratic delays and can cope with the costs. The small production units and harvesters are more affected though by the increased costs and time.

In terms of the mandatory quality of certification granted by SENASAG all the players, including companies and local communities, can have access to international markets, especially the access to the EU market is facilitated in this way since their requirements on aflatoxins contents are much higher.

As for non-mandatory standards compliance for Brazil nuts, only large companies are working on quality systems and have the resources to make improvements of their production systems on their own. This is enabling them to reach a premium market that is paying a premium price for organic products. On the long run, both quality standards and organic products may not bring forth significantly higher revenues but they will be a condition to access the European market. An example is given by Bolivian producers that could sell their organic Brazil nuts on the Italian fair trade market at Ferrara (Paz Soldan, 2003).

Results from a study conducted by Paz Soldan (2003) reveal that farmers who exported their products through the fair trade market have been able to increase their profits up to 2.5 times in 2001 and 4.4 times in 2002. The study took place in five rural communities during 2001 and ten communities throughout 2002.

Another important example of the positive impact of organic certification to local livelihoods is given by the cooperative production schemes for production and trade of Brazil nuts. The extra money received for the organic brazil nuts exported is shared equally amongst all members (Paz Soldan, 2003).

The demand on the international market motivates Brazil nut producers to adapt their production systems to the requirements of the Hazard Analysis Control Point (HACCP) and ISO 9000 standards.

At this moment, only the largest company is realising the ISO 9000 and HACCP certification process and is also looking for an international accreditation for its laboratory.

In Bolivia, 23 Brazil nut processing companies are registered at the forest superintendence, 4 of which have implemented HACCP standards: Tahuamanu CORP., MANUTATA CORP. and Beneficiadora de Almendras Urkupiña S.R.L. These companies have the largest capacity and productive infrastructure, while the others continue with handmade operations. The latter are in disadvantage concerning productivity and market access, and are forced to make improvements and carry out investments in infrastructure in order to adjust their production systems to international standards.

Some important remarks concerning the benefits of an effective quality assurance system for the Brazil nuts are presented by Paz Soldan (2003), where in an interview, Mr. Nelkenbaum, President of Tahuamanu, the largest Brazil nut company in Bolivia, stated: *“In Brazil, pasture grounds are burnt surrounding the brazil nut tree in order to clearly see where nuts fall during the harvest period. This is not allowed in ecological agriculture.”* Nelkenbaum affirms that he desires everybody to understand that the brazil nut is the only fruit which allows sustainability and prevents the evident deforestation happening in Brazil. Besides, it is worth clarifying that wherever the land has been transformed in cattle ground, the brazil nut trees stop producing their fruit.

5.1.3 Procedures for the export of NWFP

The following documents are to be presented by a company's representative to Bolivian Customs authority to carry out the export of NWFP:

- Commercial invoice of the merchandise
- Registration of the company in the Departmental Forest Superintendence
- photocopies of RUE or DUE (Register of exporters or Declaration of export)
- Packing list
- Declaration of Export
- Conformity declaration
- Document of Transport
- Sanitary certificates issued by SENASAG
- Certificate of Origin

Among these steps, those affecting directly trade of Brazil nuts, both in positive and negative ways are:

a) Conformity declaration

In order to be able to process the refund of export tariffs, national taxes are paid for the exported product or a verification of origin is granted by the Exporters Bureau System, SIVEX, when the country of destination requires this, at the cost of the exporter. SIVEX then provides a declaration of Conformity after having checked the quantity, quality and value of the merchandise to be exported.

b) Sanitary certificates

This document emitted by SENASAG certifies that the merchandises are conform sanitary standards, implying their consumption has no negetaive effect on human health and the product does not transmit phyto or zoo-sanitary related illnesses. It can be one or more of the following:

- Phyto or zoosanitary Certificate: Emitted by the Director of vegetable and animal health, of the Ministry of Agriculture, in case of exported vegetable or animal products.
- Certificate of alimentary Inocuity. Emitted by the Ministry of Health and Social Welfare (MSSS), for food products containing animal or organic vector components
- Chemical certificate: Emitted by MSSS when the exported goods are extracts of tannery, pigments, resins and perfumery preparations or cosmetics.

c) Regional and bilateral trade agreements

These documentations assure the goods to be exported are of Bolivian origin. They are emitted by the Exporters Bureau System (SIVEX) with the purpose of getting specific tariff preferences granted to Bolivia by diverse agreements with different countries. The different certificates for different destination countries are:

- The “TO”-form (Generalized System of Preferences, Certifies the Origin), if the export is to the United States, some country of the European Union or to any other country that applies to the tariff preferences system.
- Certificate of Origin “Treaty of Free Trade among the Republic of Bolivia and the Mexican States” if the export has as destination Mexico.
- Certificate of Origin “Latin American Association of Integration - ALADI” for exports to any country of South America, except to those forming part of MERCOSUR
- Certificate of Origin “Agreement of Economic Complementation Bolivia - Mercosur” if the export goes to some of the countries members of this agreement.
- “Certificate of Origin for third countries” if the export is to any other country with which Bolivia didn’t sign any agreement or treaty of tariff preferences.

The documentations for Brazil nut exports required by the Bolivian government allows to verify whether the nuts are collected under a sustainable forest management scheme which is in accordance with the criteria for SFM as defined in international conferences. This allows the local communities to benefit from the commercialisation of the accredited Brazil nuts since with the documentation they can sell them to large exporting companies or export them directly themselves.

Even though Brazil nut is a major export product, sanitary certifications are still a problem. Mr. Alfredo Oilo, President of the Chamber of exporters of Riberalta (CADEXNOR), stated that SENASAG certificates take to long and exports procedures are delayed for days. *“We had to put in service our own Laboratory, and work for the Government, since SENASAG has no budget to implement their own”*, he stated. As a Chamber, CADEXNOR is playing a third party role. Medium and large companies are solving their problems, while small co-operatives, thus local communities, have more difficulties.

5.1.4 International Agreements Influencing NWFP and Brazil nuts

a) Green certification

The Bolivian Council for the Voluntary Forest Certification (CFV) affiliated to the FSC (Forest Stewardship Council), has prepared the Bolivian standards for the certification of Brazil nuts and other NWFP. So far only Brazil nuts have been approved and are subject to a FSC green certificate upon compliance. Meeting these standards, based on social, economic and environmental criteria, is a key factor for accessing preferential markets.

b) Other international agreements

Bolivia is also signatory part of several international agreements related with NWFP, such as the International Tropical Timber Organisation (ITTO), the Convention of Biological Diversity (CBD) and the Treaty of Amazonian Co-operation (TCA).

In the first case, the international agreement signed with ITTO was supported by a specific Law passed in Congress, however no noticeable influence from this agreement is yet experienced.

The Treaty of Amazon Co-operation (TCA), was signed in Brasilia, Brazil, July 3 1978 by the Ministers of Foreign Affairs of Bolivia, Brazil, Colombia, Ecuador, Guyana, Peru, Surinam and Venezuela. The main objective of this treaty is to carry out efforts and co-ordinated actions to promote the harmonic development of the Amazon territory, promoting the rational use of the natural resources of the region, assuring the equal division of benefits over the stakeholders involved while preserving the environment. This objective is in accordance with the objectives set in the declarations of the World Summit on Environment (River of Janeiro, 1992) and the World Summit on Sustainable Development (Johannesburg, South Africa, 2002).

With the purpose of making the TCA work, the parties signed the Protocol of Amendment to the Treaty of Amazon Co-operation in December 1998, after which a new Organisation of the Treaty of Amazon Co-operation (OTCA) was created.

The TCA created a co-ordination and consultation environment for the participant countries from which gradually shared strategies emerged to tackle regional problems on multiple aspects. Thanks to the Treaty and their political-diplomatic and technical meetings, the Amazon countries have shared information and knowledge that allowed the elaboration of a collective work plan, forming a starting point for the realisation of the objectives of the TCA.

Although Bolivia is part of the TCA and participated in a summit of Amazon Chancellors on the Treaty in March 2005, programs and projects have not yet been implemented. It is expected that this treaty will become an economic instrument able to generate benefits for its members for the rational use of natural resources.

The Biological Diversity Agreement (CDB), signed in Rio de Janeiro in 1992, was endorsed by the Bolivian Law 1580 of 1994. This International Treaty was the first environmental agreement including a strong social component, where the value and contribution of the traditional knowledge is recognised, as is the necessity to equally distribute the benefits gained from natural resources and the sovereign right of the States to manage its resources. The CDB recognises the economic value of the components of biodiversity and promotes the idea that Less Developed Countries (LDC), owners of the biggest biological wealth of the planet, can benefit from this economic value trading it in the international market to improve the quality of LDC inhabitants livelihoods (FUNDES, 2003).

In this context, Bolivia launched a National Strategy of Biodiversity in 2001 whose 10 year lasting Plan of Action includes the design of local strategies and management plans for Conservation and Sustainable Use of the Biodiversity. Agricultural and forestry projects are designed combining traditional knowledge and new technologies to come to the sustainable use of natural resources.

The realisation of the above-mentioned agreements and strategies requires the consolidation of the Municipal Forest Units and empowerment of local governments, including the promotion of both wood and non-wood forest product commercialisation. In the case of Brazil nut, but also applicable for other NWFPs, this requires:

- To have a clear land tenure situation for the forest concessions from which Brazil nuts are extracted.
- To train local organisations, rural and indigenous communities in conservation programs and improving the production and quality levels of Brazil nut, including, administrative and negotiation capacities.
- To assure the equal distribution of benefits to all stakeholders in the Brazil nut supply chain

5.2 Trade-related instruments affecting Caiman

5.2.1 A change in the Bolivian legislation from total prohibition to sustainable use

Commerce of wild fauna in Bolivia is a traditional practice, though no species was exploited under a sustainable management program. This resulted in endangering and even causing the extinction of certain species such as: Caimán overo (*Caiman latirostris*), Caimán negro (*Caiman melanochus niger*) and peta (*Podocnemis expansa*). International demand for skins caused an intense hunting of the caiman in the Central region of South America, including Bolivia, beginning the early 20th century (Medem. 1983).

In Bolivia, the commercial hunting has intensified as of 1942 (King & Videz Rock 1989). It is estimated that until 1950, an average of 781 leathers of caiman (*yacare*) were extracted per day of the Beni provinces (Pacheco 1992). This hunting, which was legal at the time, reduced the caiman population dramatically. Similar harm afflicted other species of the Bolivian fauna, which motivated the Government to declare an indefinite General Prohibition in 1990 (SD 22641), both for harvesting and exporting.

In 1995, the National Direction of Conservation of the Biodiversity (today DGB), began a process of management through the Plan of Action for the Management of Wild Life, in which one of the priorities was to promote sustainable use of the *Caiman yacare*, as a result of the apparent recovery of the wild population of this species in the country. The process of implementation of this Plan of Action started with population evaluation in the departments of Beni and Santa Cruz during 1995 and 1996. Based on this information, the first National Regulation of Handling (D.S.24774 of 1997) was passed, allowing the commercial use of caiman skins, with annual hunting quotas based on an evaluation of the state of the populations. In that same year, an experimental phase started with Plans of Management and use in five properties of Beni, where the population was estimated to have an average of 72,22 caimans/km² (Aparicio 1997).

However, the low number of specimens harvested, the difficulties of the system of hunting with harpoons and the low economic benefits for the farmers who participated in the process, caused a discontinuation of this experimental phase. After this, social pressures induced the Ministry of Sustainable Development to approve a Provisional Regulation Decree with an exception character, that allowed the harvesting of 36,500 leathers of caiman during 1999; 30,000 in Beni; 3,500 in Santa Cruz and 3,000 in La Paz, for hunting and only in Beni for commercialisation, for tannery purposes, permits in La Paz and Santa Cruz were granted only for use of the skins for communities' purposes.

In March 2000, the new Regulation for the Conservation and Use of caiman (*Caiman yacare*) (R.M. N° 049 /00) was approved. This regulation concerned the management of the ecological regions where the caiman is found in the Department of Beni and where skins can be harvested according to sustainable quotas (Aparicio 2001). In 2000, the first evaluation under the new regulation took place to determine the state of the population of caiman in four of the eleven ecological regions of Beni and allowed to harvest 43,683 skins in the year 2001.

The National program was expanded for the regions of Pando and Santa Cruz in 2001, with the population evaluations in some of the eco-regions defined for this purpose and the quotas settled down to harvest 5,000 leathers in Santa Cruz and 1,556 in Pando, and none for La Paz. This program has been constituted in a very important economic alternative for the different local livelihoods depending on the forest, as well as for the departments that are, at the moment, taking advantage of the resource.

The leather export of caiman is the most important economical section within the list of controlled and registered wild animals of Bolivia. In 2001, the leather export has generated approximately between US\$ 300 thousand to US\$ 400 thousand by the supply of unrefined skins to the tanneries. At the moment, the process of allocation, control and certification of the quotas for the rational use of caiman requires a more transparent administration to avoid the confusion about the jurisdiction between the central and decentralised Government bodies, the local communities, native hunters and tanneries. In that way, a sustainable business was developed, being transparent and controlled, with productive chains from which also the local communities benefited.

5.2.2 Legal Framework for the use of Caiman (*Caiman yacare*)

A number of legal regulations regarding the hunting of Caiman for commercial purposes are developed and adopted in the Bolivian legal framework as part of the Government's attempt to promote sustainable bio-commerce. The regulations, being continuously improved are as follows:

- On July 31, 1997, Supreme Decree (DS) 24774 was approved, comprising of an experimental management plan which should regulate the conservation and sustainable use of Caiman in the Departments of Beni and Santa Cruz. This decree, indicating sustainable hunting levels, was based on different studies conducted on the Caiman population dynamics. This decree had a 2-years term. All existing, unauthorised skins were to be burnt resulting in public disapproval on the order to burn 17,609 caiman skins.
- In 1998 a Commission for the Revision of DS 24774 was ordered by the Presidency of the Republic, as a result of protests from several regional institutions of Beni to the skin burning. Later, by means of another Supreme Decree, commercialisation of the 17,609 leathers was authorised by the Department of Beni, which had fulfilled the CITES requirements for exports.
- On July 21, 1999, DS 25458 was approved accepted by means of the creation of an Express Ministerial Resolution. The decree created a new legal framework for the use of wild fauna, lifting the ban on hunting of endangered species under the condition of respecting sustainable harvest levels.
- On October 22, 1999, DS 25555 was approved, authorising the Ministry of Sustainable Development and Planning (MDSP) to emit a Ministerial Resolution that approves the Provisional Regulation allowing the use of caiman during year 1999.
- On November 30, 1999, the Ministerial Resolution 307/99 is approved, endorsing the regulation on conservation and use of caiman and allowing the controlled hunting in the months of October to December of 1999. The hunting ban was reinstalled in the year 2000 until a new ministerial resolution would again be submitted and approved
- On December 17, 1999, the Ministerial Resolution 333/99 is approved, authorising the hunt and storage of caiman skins with a quota of 36,500 leathers, being 60,8 % of the quota recommended by a group of experts of the Bolivian IUCN.

The latter authorization was carried out based on the following facts:

- An increase of the population of caiman yacare was registered after the acceptance of SD22641 in 1990 that had declared the General and Indefinite prohibition of its hunting.
- Studies made by Bolivian experts of the IUCN who recommend a maximum quota of 60.000 caimans, which according to the population dynamics studies would not expose the population to a structural diminution.

Following these regulations the use of caiman started in the department of Beni, benefiting the Indigenous Communities of Beni (CPIB) who harvested 30,000 skins in 1999. In the mean time, in Santa Cruz and La Paz no caimans were hunted, though the Ministerial Resolution 330 had granted quotas of 3,500 and 3,000 respectively for these departments.

In 2000, Main directorate of Biodiversity with the support of CESO/SACO, designed the Natural eco-regions Plan, which was elaborated with a geo-referenced information (GIS) basis, with the General Directorate of Sustainable Forest Development (DGDFS) of the Viceministry of Medio.ambiente (VMA), of the Ministry of Sustainable Development and Planning.

During that same year, no authorisations for hunting for skins were emitted because of lack of necessary technical information. However, inventories of caiman population sizes were conducted, and the results were used to draft the document "Analysis and Evaluations of the State of Conservation of the population of the Cayman yacare in Beni; use and conservation ". Based on the information in this document, quotas of 40,000 leathers for Beni, 5,000 for Santa Cruz and 1,500 for Pando were authorised. The impact of the extraction following these quotas was evaluated and based on this evaluation, the new legal framework was adapted and complementary studies for the new quotas for 2002 were realised.

It is important to mention that Bolivia maintains a CITES commitment to limit the exports of skins to 50,000 annually since 1987. During 2003 and 2004, 48,000 caiman skins were authorised

annually. Nevertheless, it is not clear whether or not the quota is being fully respected, though a brief evaluation indicated that the recent numbers of caiman skins have not yet reached the annual quota set by CITES.

When article 49 of the SD regulation is granted to a private property or to Communitarian territories of Origin (TCO's), it authorizes them to sell their Brazil nuts directly to storage centres without loosing income to the intermediaries.

Although, the use of caiman seems to be successful regarding the conservation and the sustainable use, is evident that it becomes necessary to evaluate the program of utilization of the caiman at a national level.

All these legal steps gave local communities for the possibility to participate in the commercialisation of Caiman skins, selling them to tanneries and using the meat for their alimentation. In the last 6 years, over 190.000 Caiman units for the use of skins have been harvested in Bolivia as can be seen in Table 4.

Table 3. Total number of Caiman harvested

	1999	2001	2002	2003
Beni	30.000	40.000	39.132	40.000
La Paz	0	0	0	0
Santa Cruz	0	5.000	5.000	19.344
Pando	0	1500	0	0
TOTAL	30.000	46.500	44.132	59.344

Source: CITES-Bolivia; Made by: HIB Latinoamerica

The major challenge of changing the Government policy from a total prohibition to sustainable use of Caiman is to maintain a strong caiman population size while at the same time ensuring the local people are benefiting from the caiman commercialisation. So far, this challenge seems to have been realised.

5.2.3 Commercialization platform

At this moment, 14 of the 260 reptile species reported in Bolivia are on the list of threatened reptile species (included in the Red book of the Vertebrates of Bolivia). These species are included in Appendix II of CITES, which implies that its commercialisation must be strongly controlled. Caiman is one of the species listed on Appendix II.

The Ministry of Environment, Natural Resources and Forest Development (VMARNDF) grants the hunting licenses for wild animals, authorising the hunt of 25 % of the adult animals of at least 180 cm in overall length for populations in a good state. The main share of hunted animals is exported, for which market it is required to present a national certificate for export (according to CITES regulations) for the species. The CITES export permit can be directly obtained by the skin traders from the authorised storing centres, under the supervision of competent Departmental and national authorities.

The framework of the National Program of Sustainable Bio-trade (PNBC) promotes projects which utilize biodiversity resources under the condition they fulfil the regulations of CITES. The reasoning behind this attitude is that bio-trade can stimulate national enterprises and attract foreign investment which can boost the Bolivian economy and thus alleviate poverty of the populations habiting the Amazonian Forests.

The license for the use of this NWFP is given to indigenous communities or cattle farmers, who thereafter perceive a legal payment when trading the caiman skins of US\$ 7 to 12, depending on the skin's size. Assuming a price average of US\$ 9.5, the income generated for these actors in the year 2001 can be estimated to have been between US\$ 285,000, based on the granted quota of 30,000 skins, and US\$ 441,750, based on the national use of 46,500 skins. For the years 2002 and 2003, an increase of 20 to 30 % is seen in relation to 2001.

A comparison of the above mentioned information with the World Conservation Monitoring Centre data, shown in table below, illustrates that quotas for the use of Caiman are not exceeded by the permits granted by the Bolivian Government and, harvesting of this animal is under limit of these permits.

Table 4. Gross export trade report for *Caiman yacare* from Bolivia

Term	Unit	1998	1999	2000	2001	2002	2003
Bodies		0	0	0	0	1	2
Meat	kg	0	0	0	0	0	10
Skin pieces	kg	0	0	0	0	13	0
Skin pieces		0	0	0	0	3525	500
Skins	sides	3514	35000	0	56339	67435	80124
Skins		0	0	4116	0	0	1056
Tails		0	14000	0	11141	17674	39641

Source: World Conservation Monitoring Centre at www.unep-wcmc.org/species
Made by HIB Latinoamerica

Between 2003 and 2004, the export of caiman skins was authorised from the Departments of Beni and Santa Cruz going to the markets of Italy, Panama, and the United States. According to export statistics of the Department of Santa Cruz until October of 2004, 6269 kg of caiman leathers were exported with a total value of US\$ 468,847, representing the 0,04% of the departmental exports. Furthermore, in 2004, 70 ton of “yacare meat” was exported to the markets of Japan and the United States.

6. Conclusions and trends in the application of trade related instruments to the trade in NWFP

Important conclusions of this study can be made, with both positive and negative impacts of trade instruments over the environment and local livelihoods.

6.1 Conclusions on Trade Instruments

6.1.1 Forest and environmental regime instruments

- An important contribution of the Forest Law 1700 and all its regulatory Decrees and technical regulations is the change in the mind set of the players involved in forest activities, towards the sustainable use of forest resources, as a key factor for improving the living conditions of today's and tomorrow's generations, while preserving the environment.
- Another benefit of the Forest Law 1700 is that local communities are recognised as key players with the same rights as companies.
- Planning and monitoring tools have been designed for wood extraction, however because they are strictly controlled, NWFP also are permanently monitored and all the use has to be performed under sustainable principles. This is the case of Brazil nut that requires a certificate of origin that guarantees that the product has been harvested from an authorised area, whether is a concession or a communitarian territory.
- All the paper work, that the legal instruments require are costly in time and money since detailed information is required. This is an obstacle for low income players. In some cases they just have the land tenure cleared but cannot access to harvesting permits, limiting the capacity of NWFP to providing economical benefits.
- Despite this difficulty, all the information required by these legal instruments prepare the players to have an international certification such as FSC or organic certification that could increase the value of the products, both in image and access to international markets.

6.1.2 Export instruments

- All the steps necessary for a company or an association of local producers to export can become a barrier since all the legal requirements are targeting formal, medium size and large companies. Small producers some times are not in a legal company form and can not get all the export documents.
- On the other hand the complete structure and requirements of the export instruments make sure that all products coming out from Bolivia comply with international requirements in terms of environmental certifications. This interconnection with the other instruments make possible that the use of natural resources, i.e. NWFP, goes together with

6.1.3 Sanitary Certification

- The sanitary requirements are mostly a limitation when it comes to NWFP for export. The procedure of the sanitary certificates is not easy especially for those cases of non well-known products, as in the case of Caiman skins and meat.
- The list of requirements before having the Certificate can be very long and very difficult to complete. In some other cases, such as Brazil nuts, the Government official certification body, SENASAG, has no appropriate facilities and has to use a private Laboratory.
- SENASAG is a new institution created to support commercial activities of food and natural resources sectors. They are located in the city of Trinidad, Beni; however, due to its limitations, they don't reach easily local communities located close or in the forest areas. This causes that order to fulfill the requirements to get a sanitary certification, they have to move to the cities

where SEBASAG works. This is a barrier that restricts local communities participation in the NWFP business.

6.1.4 Other certification models

- Although not mandatory, certification processes can make a difference between having a market share or being out of business. Whether it is a product/process quality certification, such ISO 9000 or an organic / environmental certification, benefits are evident. In the case of Brazil nuts, organic certification not only allows producers to get to a specific market niche but also gives them premium prices.
- Certification processes are expensive and local communities and small companies can't have a chance to be certified by themselves. Without Government or other type of support these instruments will represent a barrier.
- However a good experience of a cooperative of small farmers shows that it is possible even for small players. This group of producers reached a Fair trade market of Italy and received 33% over the price compared to international market's price.
- In this same line, organic market has a growing trend, thus organic certification will, one hand make large companies to produce more and then to employ more people in the forests, and in the other promote the natural production of NWFP, thus protecting the environment.

6.1.5 CITES and other international agreements

- Even though CITES and other international agreements have a large list of requirements that have to be complied strictly, makes possible for local communities to receive benefits for the use of certain species without threatening the environment.

6.2 Conclusions on the specific products

6.2.1 *Bertholletia excelsa*

- In the last 5 years the Government of Bolivia is improving the regulations in order to promote the exports of Brazil nuts and keep the first place in the world wide context. These improvements can be found in the mandatory sanitary certification, required to export this product and that is based in the European requirements on aflatoxins content.
- Due to the international market position, Brazil nuts represent the most important NWFP for Bolivia. The value of the exports of this product represents almost a 50% of the total forest sector exports, for the last 5 years.
- The importance of this "industry" and the international markets have induced many small producers to get organised in local co-operative-type entities to harvest the product, both in concessions (to ASLs) and the own originary territory (TCO).
- So far different efforts to improve all the required steps and paper work is being done. However, these remedies have been applied in a process of improving momentary barriers. This means that the legal framework currently is based in different Supreme Decrees and in some cases only arts of such Decrees remain valid, while other where substituted by new Decrees.

6.2.2 *Caiman yacare*

- Bolivia uses and takes advantage of sustainable way caiman yacare and its natural ecosystems, generating economic and social benefits, improving the quality of life of the communities and societies related with the species. Not so long ago, this local livelihoods were not taking part of the national economic activity, and for the first time they can obtain economic resources coming use of this species.

- The Bolivian state, (National and Departmental government) and civil society, articulate efforts, develop analysis and apply regulatory criteria, such as Resolution 147/2002, that regulates sustainable use of Caiman economically-oriented, for the conservation and use of the caiman, helping with it to the sustainable development.
- So far, assuming that the use of yacare as an strategic natural resource, is being done under regulations contained on DS. 24774, there is no reason of endangering the existing population of caiman. However, there still exist the black market for yacare skins, though reducing his influence thanks to strict controls, remains a risk factor.
- Another risk factor is the increasing of deforestation of the surrounding zones of caiman's habitat, that could affect in this species' population.
- Another factor of high risk is the contamination of water bodies where caimans lives, as a result of the extractive gold mining. That uses large percentage of mercury.
- The process of use of the caiman is in a stage of transition of an old illegal activity to a sustainable program that looks for the conservation, which generates problems in the administration and control since it still exist illegality levels that will be difficult to effectively control in the short term.
- There is an institutional weakness of the state in its three levels national, departmental and local to administrate the sustainable use of caiman, especially in the control and supervision aspects, that requires to identify accurately technical institutions and define the roles accurately and provide with support.
- It exists satisfaction of the sectors benefited from the process, because, despite the identified problems, this activity has become an employment generator, movement of capital and economic generation of activities in remote and difficult to access places with equal participation in the benefits
- Sustainable use of caiman and other species of wild fauna, appear as a mechanism of consolidation of the ownership rights and can expand the criteria of the economic and social function of land.
- Legal right of use is back to local livelihoods, including farmers, indigenous communities cattle breeders and generated a conservation process in the areas with private and communal proprietors when caiman started to be considered commercial good
- An incoherence between the real distribution of quotas and the results of the technical study due to the weakness and lack of consistency of the technical base study, which is one first aspects that must corrected based on these conclusions.
- The regulation of use of the caiman presents impreciseness and contradictions that make difficult the efficient administration of this resource, thus, modifications, that correct these faults, are to be made.
- There must be a permanent program of education to protect the wild fauna in order to be able to take advantage of these resources in a sustainable way.
- A new methodology for monitoring and quota determination has to be developed with active participation of the stakeholders, since the current methodology is not satisfactory.
- A process of qualification and promotion specialised technical services supply, at local and national levels has to be generated
- Eco-regions have to be used to improve monitoring and administration of the sustainable use of caiman.
- Monitoring areas that have requested the use of the resource, such as the TCOs, farms and communities farmers has to be done.
- Monitoring in the production units, visiting all the water bodies in each selected farm or TCO, characterising them in terms of the vegetation and landscaping or ecological factors, counting caiman individuals and classifying them in categories of size.

7. Recommendations/Proposed areas for Further Research

7.1 Recommendations for *Bertholletia excelsa*

The following is recommended to foster the Brazil nuts industry, for value adding and making a fair distribution of the economic benefits to all the stakeholders:

- It is required to promote education, to all levels and every actor of the value chain, on the requirements, standards and market conditions, in order to improve the product's quality.
- The Government, both at a National and Prefecture levels, together with the companies, should promote a certification program, starting with the forest management scheme, such as FSC certification, a HACCP based certification of the production process in *beneficiadoras* (processing plants), and other management quality systems, such as ISO 9000 or 14000. This program should include several components including education, training, technical assistance and incentives in competition like activities.
- Implement appropriate infrastructure for the aflatoxin analysis, installing laboratories, having specialists that take samples in situ and others qualified personnel.
- It is required to design a system that allows to have uniform approaches for diagnoses on the elimination and handling of aflatoxins.
- En evaluation of the current sampling system, proposed by the EU to outline improvements or corrections has to be carried out. A professional approach of experts in the statistical field and also related to the trade of nuts, is required.
- It is important to make negotiations at government's level on the regulations imposed by the EU and the US, taking advantage of the support from some countries to the regulations that the country is taking as an answer to international commitments.

7.2 Recommendations for *Caiman yacare*

The following issues are recommended for the sustainable use of Caiman in order to become a sustainable source for the improvement of living conditions of local livelihoods:

- Hunting season has to be adapted to the reality of the zone and the environmental and biological characteristics of the species
- It is recommended to define and to respect technical and legal requirements for the applicants of licenses
- national and local level calls for the license for tanneries, fulfilling the terms established by law, have to be done
- The licenses for use of the species must be for periods of 3 to 5 years, defining annual quotas, based on the results of annual monitoring
- The licenses of commercialisation and industrialisation must be valid during all the period of the program, with environmental inspections, both technical and legal, for an annual certification
- More efficient and accurate technical elements for the use of skins, including quality certificates, with the purpose of guaranteeing a product of good quality and the conservation of the species, have to be defined.
- Promotion of the integral use of meats and bones, adapting the standard for this purpose, is required. The prefecture of Beni must facilitate the infrastructure of ENFOPESCOR for the export of meat by private operator
- Reduction of red tape for awarding and authorisation processes at national level is required
- The state must define mechanisms to control the supply and demand of products of caiman.
- It is important to separate the control centres and the commercialisation centres, which must be adapted to the institutional qualifications, the availability of human and economic resources and the environmental conditions of the zones.

- Communication and information processes of all the aspects related to the sustainable use of caiman in different media and directed to the stakeholders is required.
- It is essential to establish an integral plan of education in all levels of the activity
- A reinforcement on the control and supervision mechanisms of the state is needed, because a weakness of the people in charge has been detected..
- It's important to decentralise and involve the municipalities in the process of control and supervision
- A departmental commission of caiman with participation of stakeholders must be conducted.
- The Government has to improve the instruments used in the control, such information centres, formats and types of guides, certification, location of the control centres, etc.
- Measurement of the size of skins in the tanneries has to be introduced as a control tool.

7.3 Proposed areas for further research

- Assess social impact of the Brazil nut industry in rural livelihoods, which provide labour force, and don't take part in the process chain in main roles
- A new evaluation of the population and environmental assessment of the Program to study the actual impact of the so called "sustainable use" of *Caiman yacare*.

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APPENDIX

Relevant regulations regarding NWFP, especially Brazil Nuts and Caiman

Forest legal Regime

- ❖ Forest law (Law N° 1700, 1996).
- ❖ Regulations of the Forest Law (DS 24453, December 1996).
- ❖ Technical Regulations for the Elaboration of Forest Management tools (Inventories, Management Plans, Operative Plans, Maps, etc) in Private Properties or Concessions Surfaces greater than 200 Hectares (RM 248/98, October 1998), for private properties smaller than 200 Ha. (RM 132/97, June 9 1997)
- ❖ Technical Regulations for the Elaboration of Forest Management tools (Inventories, Management Plans, Operative Plans, Maps, etc) in Indigenous Community Lands (RM 136/97, June 1997).

Environmental legal Framework

- ❖ Law of the Environment (Law N° 1333 of 1992).
- ❖ General Regulation of Environmental Administration (DS 24176 of December 8 1995)
- ❖ Regulation of Prevention and Environmental Control (DS 24176, December 1995).
- ❖ Law of wild life, national parks, hunting and fishery (Decree-Law 12301, March 14 1975).
- ❖ Establishment of the Historical Ecological Pause (DS 22407 of 1990).
- ❖ Regulation for the Historical Ecological Pause (DS 22884 of 1991).
- ❖ The Law of General Indefinite Prohibition on Hunting (DS 22641 of 1990): prohibits the pursuit and capture of wild animals and the collection of their products for commercial purposes. Only collection of species is allowed for scientific uses. The hunting is allowed to indigenous communities with ends of subsistence. Any hunt type or crop of products of wild animals with commercial ends should be authorized specifically by a presidential ordinance on the base of a case by case study.
- ❖ Régime of Concessions of Fiscal Lands for Conservation ends and Protection of the Biodiversity, Research and Eco-tourism (DS 24773, July 1997).
- ❖ General Regulation of Protected Areas (DS 24781, Julio 1997).
- ❖ Regulation for the Use and Conservation of Caiman (DS 24774, 31 of July 1997).
- ❖ National service of Protected Areas (DS 25158, September 1998)

Labor Legal Framework

- ❖ General law of Labor that includes a great number of dispositions and amendments of the Original Law of May of 1939.
- ❖ Supreme resolution 158242 of July 1971, dealing with rubber and Brazil nuts workers, where contracting under the labor regime was mandatory for companies and settles the right of the workers to receive first necessity items, at low cost. Supreme Resolution 158244, of the same

Annex C

National Analysis of Trade-Related Instruments Influencing Trade in African cherry (*Prunus africana*) and the African grey parrots (*Psittacus erithacus*): Applications and Impacts on Poverty Alleviation and Sustainable Forest Management in Cameroon.

Prepared for The Food and Agricultural Organization of the United Nations (FAO)
Non-Wood Forest Products Programme

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year providing these workers with social security, including maternity benefits and work accidents coverage, to be paid by the companies.

Agrarian legal framework

- ❖ Law of the National Service of Agrarian Reforms -INRA (L. 1715, October 1996).
- ❖ Unified Agricultural taxation régime (DS 24463 of 1996)

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Acronyms and Abbreviations

ASSOFOMI	Association of Oku Forest Resources management Institutions
ASSOKOFOMI	Association of Kom Forest Management Institutions
CBD	Convention on Biological Diversity
CIFOR	Centre for International Forestry Research
CIG	Common Initiative Group
CITES	Convention on International Trade in Endangered Species of wild Fauna & Flora
DFAP	Department of Wildlife and Protected Areas in MINEF
DRC	Democratic Republic of Congo
EU	European Union
FAO	Food and Agricultural Organization of the United Nations
FCFA	Franc de la Confederation Française Africaine
FMI	Forest Management Institutions
FUG	Forest User Groups
GDP	Gross Domestic Product
GoC	Government of Cameroon
ICRAF	World Agroforestry Centre (formerly International Centre for Research in Agroforestry).
LBZG	Limbe Botanical and Zoological Gardens
LNP	Lobeke National Park
NWFP	Non-wood forest products
MEA	Multilateral Environmental Agreement
MINEF	Ministry of Environment and Forestry
MOCAP	Mount Cameroon Prunus Management Common Initiative Group
MT	Mount Cameroon
NGO	Non-governmental organization
NPP	Norway Partnership Programme
SFM	Sustainable Forest Management
UK	United Kingdom
USA	United States of America
US\$	United States of America Dollar
WPT	World Parrot Trust
WWF	World Wide Fund for Nature

1. Introduction

This paper was commissioned to the Center for International Forestry Research (CIFOR) by the Food and Agriculture Organization of the United Nations (FAO) under the Norway Partnership Programme (NPP) “Forests for Sustainable Livelihoods (FNOP/INT/004/NOR).” The paper dwells on trade-related instruments influencing trade in non-wood forest products (NWFP), which is a sub-component of component 3 “Trade in Non-Wood Forest Products – Options for Poverty Alleviation” of the overall study on forests for sustainable livelihoods. The NPP complements and accelerates the implementation of ongoing activities of FAO’s Programme “Promotion and Development of Non-Wood Forest Products (NWFP)”. The programme aims at improving the sustainable use of NWFP in order to contribute to the wise management of the world's forests, to conserve their biodiversity, and to improve income-generation and food security.

The NPP component 3 “Trade in NWFP – Options for Poverty Alleviation” aims at analyzing i) the impact of trade in NWFP on local livelihoods and on the sustainable use of NWFP and ii) the applicability of relevant trade-related instruments as adequate policy tools to promote and develop NWFP on a sustainable basis and including the adequate share of benefits among stakeholders concerned. Therefore, the overall objective of component 3 of the study is to analyze the impact of trade in NWFP on poverty alleviation and on the sustainability of the resources. However, discussions in this paper are limited to trade-related instruments with the specific objective to analyze how such instruments influence trade in NWFP and their impacts on poverty alleviation and sustainable forest management in Cameroon. Some of these trade-related instruments include:

- National public policies (e.g. national forest programmes, harvesting restrictions/bans);
- International and intergovernmental processes (e.g. multilateral environmental agreements such as CITES, CBD);
- Market-based instruments (e.g. certification, supply-chain management).

Two NWFP including *Prunus africana* and the African Grey parrots (*Psittacus erithacus*) were selected from Cameroon as case studies to analyze how trade-related instruments influence their commercialization and contributions to rural livelihoods and poverty alleviation. The criteria for selecting these products include:

- High socio-economic importance,
- High domestic/international trade,
- Threatening of sustainable production by poorly controlled harvesting/capture associated with international trade.
- Existing level of national and international intervention and
- Available published and grey literature

Prunus africana (African cherry or Pygeum) and the African Grey parrots are some of the most highly commercialized NWFP in Cameroon with fairly well documented production and trade. However, such commercialization and the regulations that govern them have been identified to cause major impacts (positive and negative) on the sustainability of production as well as on the benefits that accrue to stakeholders. One reason suggests that there has been no effective mechanism put in place to ensure sustainable production and equitable trade due to the lack of adequate data to clearly show the possibility of a win-win situation in the light of equity and sustainability for both the traders, local producing communities and resource conservation. This has rendered dialogue to arrive at fair trade terms difficult. A win-win situation in a production and trade system is believed to be one in which the sustainable supply of raw materials, as well as, better prices commensurate to the efforts

and end value of the products are assured. Therefore, this paper analyzes how trade-related instruments have influenced the commercialization and livelihoods contributions of the two-selected NWFP in Cameroon, and also suggests how positive impacts can be enhanced or negative impacts minimized.

The activities tackled by this paper included:

- Identification of *Prunus africana* and the African Grey parrot as key highly commercialized NWFP in Cameroon.
- Description of the selected NWFP, including ecological and socio-economic characteristics and the impact of trade on the livelihood of stakeholders concerned.
- Identification and description of relevant trade-related instruments applied in the Cameroon with regard to the selected NWFP
- Assessment of the relevance of the impact of trade-related instruments on sustainable forest management and on rural livelihoods compared to other influencing factors (e.g. market dynamics, agricultural concerns, access to land and land rights, extra-sectoral influences);
- Identification of emerging patterns, including as those related to the positive and negative effects of the application of various types of trade related instruments;
- Proposition of policy recommendations and priority areas for more focused research;
- Provision of comments to the global analysis on trade-related instruments influencing trade in NWFP.

2. Methodology

In addition to desk-reviews and email correspondences, a total of eleven (11) sites (450-850 Km from Yaounde), where *Prunus africana* and the African Grey parrots are exploited were visited over a period of 21 days for personal observations, the conduct of interviews and for the collection of both grey and published literature. The aim of this exercise was to update and/or complement available literature. A number of informal meetings were held with stakeholders and more than 28 resource persons were interviewed (Appendix I). These included local producers as well as experts working with local and international NGOs that are involved in the conservation and management of the resources. Interviews were conducted in an overt manner. However, the sensitive nature of some of the information provided by some of those interviewed made it mandatory not to make individual references to them in this report.

In this paper, the FAO definitions of ‘forests’ and ‘NWFPs’ have been adopted. Forest are lands of more than 0.5 ha, with a canopy cover of more than 10%, which are not primarily under agriculture or urban land use (FAO, 2002). NWFP consist of goods of biological origin other than wood, derived from forests, other wooded lands and trees outside forests (FAO, 2001). Trade-related instruments include national policies and regulations; signed regional and international treaties and conventions that affect the exploitation, management and trade in NWFP in Cameroon. For comparative estimates of resource values over the year, this paper considers the average USA Dollar exchange rate against the local currency, the Franc CFA to be 1US\$=650 FCFA. This is due to fluctuations in the value of US\$ over the past five years.

3. Overview of trade in NWFP and contribution to livelihoods in Cameroon

There are many non-wood forest products in Cameroon that are traded at local, national regional and/or international levels. For instance, in a single market, New-Bell, Douala in the humid forest zone of Cameroon, the annual commercial value of a highly traded NWFP such as *Ricinodendron heudelotii* was estimated at US\$ 248700 in 1998 and US\$ 464235 in 1999 (Ngono et Ndoye, 2004). The annual value of the African plum market in Cameroon was estimated at over US\$ 7 million and exports to the expatriate African community in Europe and the USA were valued at over US\$ 2.2 million (Awono et al. 2002). The total commercial value of *Irvingia* trade in the year 2000 in ten major markets in the forest zone of Cameroon stood at over US\$ 825714. The local markets of NWFP were estimated at US\$ 1.6 million during the first six months of 1996 in the humid forest zone of Cameroon (Eyebe et al, 1999).

Regional trade remains an important aspect of NWFP economy in Cameroon. For example, the value of *Irvingia* spp. trade to Gabon, Equatorial Guinea, Nigeria and Central African Republic was estimated at US\$ 260000 in 1997 (Ngono and Ndoye, 2004). These high market values are repeated in Rio Muni, in Equatorial Guinea, where Sunderland (1998) reports that *Irvingia* spp. seeds are sold more widely than any other forest product. Border trade in *Irvingia* spp. kernels between Cameroon and Gabon (Abang-Minko Market) increased by over 320 % between 1999 and 2000. Between Cameroon and Equatorial Guinea (Kye-Ossi market) the volume of trade increased by about 8%. This indicates a growing regional as well as international market for *Irvingia* spp. Sales of processed kernels to the United Kingdom, USA, and Europe are reported, with about 100,000 potential consumers in these markets (Lesley and Brown, 2001).

At an international level, France and Belgium import annually over 100 tons of *Gnetum* spp. (a leafy vegetable) worth 2.0 billion FCFA (USD 3.07 million) in the French and Belgian markets (Tabuna, 2000). In 1999, the value of *Prunus africana* used in the treatment of benign prostate hyperplasia in Europe and North America was estimated at over US\$ 700 thousand to Cameroon and US\$ 200 million to the pharmaceutical companies. Similarly, the export value of the bark of *Pausinystalia johimbe*, used as an aphrodisiac in Europe and America, was US\$ 600 thousand in 1998 (CARPE, 2001).

The economic importance of NWFP in the livelihoods of forest-dwellers in Cameroon should not be underestimated. Examples include: It is estimated that 70% of the total population of the Takamanda Forest Reserve (TFR) area collects NWFP for consumption and sale. This represents an estimated income of US\$ 714286 per annum to some 15707 people living in 12 villages within and around the TFR (Sunderland et al., 2002). The harvesters of *Prunus africana* bark around the Mount Cameroon Area get about 70% of their annual cash income from the activity (Ndam, 2004). Villagers adjoining the Campo Ma'an National Park in Cameroon earn a monthly income of US\$ 45 for collectors of oil palm and raphia wine, US\$ 60 for manufacturers of rattan chairs and US\$ 45 for collectors of bush mango per household per season (Sonne, 2001). Still in the humid forest zone of Cameroon, the average monthly income to harvesters of edible palm weevil larvae is about US\$ 71 and US\$ 50 to retailers of roasted larvae sold in snacks and along roadsides or bars. Such income is significantly higher than that obtained by unskilled workers in town or by the producers of cocoa (US\$ 28) (Dounias, 2004).

Socially, NWFP play crucial roles in reducing social tensions within rural households by providing cash income for the purchase of basic needs such as soaps, kerosene, meat and most importantly sending their children to school. This has been confirmed by over 80% of the households selling

NWFP in the humid forest zone of Cameroon. In terms of gender equity many of the key commercial NWFP are gathered, processed and marketed by women and children, thus, forming a secure source of employment for them. For example, women form 94% of the traders in NWFP in the humid forest zone of Cameroon (Ndoye et al., 1997). In the absence of such commodities women and children engaged in NWFP activities might be involved in social vices.

In addition to the current contributions of some NWFP to rural household revenues, their economic potentials for local income generation and poverty reduction are currently higher than from traditionally known cash crops such as cocoa and coffee in Cameroon (Ndoye and Tieguhong, 2004). For example, Ndoye and Tieguhong (2004) observed the average prices of a kilogram of *Irvingia spp.* and *Ricinodendron heudelotii* in the humid forest zone of Cameroon to be more than 200% higher than the average price of the same quantity of cocoa beans between 1996 and 2003. In Southern Cameroon, Fondon and Titi Manga (2000) found that household average annual income from the sale of *Gnetum africanum*, a leafy vegetable, was US\$ 2630. An economic analysis by Gockowski et al. (2004) found that the sum of net returns associated with non-cocoa trees from a 0.5 ha cocoa agroforest was 1.3 times higher than revenue from cocoa, a traditional cash crop in the humid forest zone of Cameroon.

From the above few statistics, many of which are underestimated, any development worker involved with the NWFP sector may be correct to proclaim that NWFP may have great impacts on poverty alleviation given the right institutional and resource environments. The right institutional environments may give way to better policy and legal frameworks that are pivotal in resource allocation and investments for development in processing and marketing of NWFP. In this light, this paper gives special attention to the trade-related instruments that may create an overall conducive environment for the harvesting, collection, production, processing, trade and marketing of NWFP in Cameroon.

3.1. Overview of the trade in selected NWFP

Two NWFP including *Prunus africana* and African Grey parrots were selected from Cameroon as case studies to analyze how trade-related instruments influence the trade of NWFP as well as assess their contributions to rural livelihoods and poverty alleviation. The criteria for selecting these products include:

- High local, national/international trade values,
- Threatening of sustainable production by poorly/uncontrolled production.
- Existing institutional interventions at national and international levels
- The potentials to develop the products and its market in producing country,
- The potentials of sustainability in the light of proper utilisation of trade-related instruments governing their trade.
- The potentials for poverty alleviation at the local level following better trade arrangements and
- Available published and grey literature

Prunus africana and the African grey parrot have been identified as priority species of international value for conservation and development because it has been observed that uncontrolled trade is already threatening their sustainable production from the wild (Ndam, 2004; Tamungang, 1997). For example, the existing wild stock of *Prunus africana* in the mountain ranges of Cameroon are already facing over-exploitation calling for some regulatory measures, as well as measures to complement natural regeneration. Over 3500 farmers are already engaged in planting *Prunus africana* in the Northwest Province of Cameroon (Cunningham et al, 2002).

3.2.1 Case Study 1: *Prunus africana* Trade in Cameroon

Ecology of *Prunus africana*

Prunus africana is a large evergreen tree that grows in afro-montane regions of Africa. It has pendulous branches with thick, oblong-shaped, leather-like, mat-colored leaves and creamy white flowers. The fruit (drupe) resembles a cherry when ripe. The seeds are believed to be recalcitrant. The dark-brown to grey bark of the trunk is the part used for medicinal purposes. The wood is durable and has been used in household goods. The tree is present in highland mountain forests in Africa and Madagascar, occurring in Afro-montane forest "islands" from 4,500 to 6,000 feet (Prunus Net Und).

Prunus africana is the only species of Genus *Prunus* native to Africa and can grow to a height of up to 40 metres and has been reported in 22 countries, most on the eastern side of the African continent. From eastern Africa, the range extends westward into central Africa (Katanga, DRC, Congo-Zambzi River Basin Divide). Further west, there are disjunct populations in West Africa (Bioko, Cameroon/Nigeria and Sao Tome) and Angola. Populations in Comoros and Madagascar are also disjunctive. In Cameroon, *Prunus africana* trees are distributed on the mountain regions of the Southwest, West and Northwest provinces ranging from 700 m to 3000 m altitude (Achoundong, 1995 cited by Ndam and Tonye, 2004).

In Cameroon, the harvesting of *Prunus africana* takes place around Mount Cameroon, Mount Kupe, and in the Bamenda highlands, including Mount Kilum/Ijim in Oku, Kom and Nso. For the most part, this exploitation has been unsustainable, with trees being felled, rather than harvested according to established sustainable techniques. Bark harvesting is hard work, requiring collectors to climb *Prunus* trees and carry 30-70 kg loads of bark through mountainous forest. This makes the activity suitable for strong young men (Ndam, 2004; MOCAP, 2004). The average yield of bark per mature tree is about 75kg (Acworth *et al.* 1998). About 400 kg of fresh bark, representing 200 kg of dried bark, are needed to make 1 kg of extract (Cunningham *et al.* 1997).

History of *Prunus* Trade in Cameroon

Prunus africana leaves and bark have been used in traditional remedies for centuries and they continue to play this role today. The bark was traditionally powdered and drunk as a tea for genito-urinary complaints, allergies, inflammation, kidney disease, malaria, stomachache, and fever, among other uses. Folkloric use in Africa attracted the attention of European researchers, such that in the late 1960s the potentials of *Prunus africana* for modern western medicines was discovered, particularly for the treatment of older men suffering from the inflammation of the prostate, a disorder that leads to urination difficulties (Ndam, 2004). This disorder is generally referred to as enlarged prostate gland hypertrophy or benign prostate hyperplasia (BPH), which affects more than 50% of men over the age of 50 in Europe and North America (ICRAF, 2000). Commercial exploitation started in 1972 (Schippmann 2001) with extracts from the pulverised bark being incorporated into capsules and sold under various trade names, including Pygenil, produced in Italy, and Tadenan, produced in France (WWF, ud). Cameroon is the biggest exporter of *Prunus africana* bark and bark extract with annual average exports of 1.5 million kg of bark during the 1980s. This rose to 2 million kg in the early 1990s. Even in 1990/1, with an official ban on exports in force by the Cameroonian government, 3.9 million kg were exported (Cunningham, 1997). This indicates a high level of corruption in the production zone and/or the entry of a new corps of lawless exploiters into the production and trade chain.

***Prunus africana* trade**

Prunus africana is one of the most highly commercialized NWFP from Cameroon with an increasing international commercial value. *Prunus africana* has a growing annual export market value of over US\$ 220 million (CARPE, 2001). *Prunus* is traded in the form of dried bark and as bark extract. In Cameroon, a harvester collecting 30 kg of bark per day can earn an average of 260 FCFA kg⁻¹ (US\$ 0.4 kg⁻¹) around Mount Cameroon area (MOCAP, 2004), 80 FCFA kg⁻¹ (US\$ 0.12) in Oku and Vekovi and 100 FCFA kg⁻¹ (US\$ 0.15) in Kom (at exchange rate of 1US\$=650FCFA). The harvesters are generally not happy with the current prices offered for their products. The harvesters around Mount Cameroon believe that if buyers could offer 300 FCFA kg⁻¹ (US\$0.46 kg⁻¹) of fresh bark and 600 FCFA kg⁻¹ (US\$ 0.96) of dried bark, they would be happy. On the other hand, producers from Oku, Vekovi and Kom villages believe that a price of 200 FCFA kg⁻¹ (US\$0.31) of fresh bark would be considered very fair, because they understand that the roads are in bad conditions and their villages are very far from the port of export located in Douala.

Prunus africana is exported mainly to Europe, where France is the biggest importer followed by Spain. Extracts are re-imported from France, Spain and Italy. At least four European companies have interests in *Prunus africana* bark for medicinal purposes: Laboratoires Debat (France) and its subsidiary company Plantecam Medicam in Cameroon; Madaus (Germany, Spain); Prosynthese (France); Invemmi della Beffa and Indena Spa (Italy). Bark is bought for US\$ 0.3-0.41 kg⁻¹ in Cameroon at the factory gate (Ndam and Tonye, 2004) and for US\$ 2 kg⁻¹ from Kenya (WWF, ud). Capsules filled with 25 mg to 50 mg of the bark extract are marketed in Europe, a 15-tablet box costing US\$ 7-8. Extract in tablets or capsules are marketed under two main trade names: 'Tadenan', produced by Laboratoires Debat (France) and 'Pygenil' produced by Indena Spa (Italy) (WWF, ud).

For the harvesters living around Mount Cameroon area, bark collection accounts for about 70% of their total household income (Ndam, 2004). About 60% of the households in this area are involved in the production-to-consumption system of *Prunus africana* (Ndam and Tonye, 2004). This area is inhabited by 300000 people distributed in 51 villages with an annual population growth rate of 3-6%. Around the Oku Mountain region, it was estimated that a third of the over 11000 people living in four frontline and six background villages to the forest supplement their income by collecting the bark of *Prunus africana*. In addition to revenues that accrue to individuals, there are benefits that are enjoyed by the general community through development projects such as water, roads, bridges and school projects in places such as Oku and villages around Mount Cameroon.

Livelihoods contribution of *Prunus* sales to Oku people

In the Oku region, there are 18 forest user groups (FUGs) and six forest management institutions (FMIs). FUGs are formed at the village level with the collaboration of village chiefs and traditional councils. FMIs are legally established community groups that have acquired community forest to manage in a sustainable manner. The six FMIs in Oku have an umbrella organization that coordinates their activities in consultation with traditional authorities (TA), popularly known as Ngumba or Nkwifon. This organization is known as the Association of Oku Forest Management Institutions (ASSOFOMI), which links all FMIs with the government services and other NGOs. The Ngumba works to ensure the proper functioning of ASSOFOMI. In Oku all exploitation of *Prunus* is under one of the FMI operating in a community forest. For example, the Emfveh-Mii community forest has an area of 909 ha divided into 13 compartments, 9 of which are rich in *Prunus africana*. *Prunus africana* is considered a community resource that is of benefit to every member of the community.

The average price per kilogram of *Prunus africana* sold is 80 FCFA. Individual harvesters, considered as labourers for the community are paid 30 FCFA per kilogram of *Prunus* harvested and brought to collection point, while a government tax of 10 FCFA/kg is also paid. The remaining 40 FCFA/kg is managed by the community forest management institution. Last year (2003), total revenue of 3.3 million FCFA (US\$ 5078) was raised for the community institution from the sales of some 42 tons of *Prunus africana*. The money is usually saved in a credit Union account, subject to distribution according to agreed rules. The money was divided as follows:

- 35% for the running of the management of FMIs,
- 50% for community development, and
- 15% for regeneration and training on forest conservation (Emfveh-Mii CIG, 2001).

The Emfveh-Mii community forest has 4 frontline and 6 background villages that benefit from the revenue generated from the exploitation and sales of *Prunus africana* in this forest. Out of the 3.3 million FCFA generated in 2003, each frontline village was allocated 225000 FCFA for development. Apart from Elak that was allocated 50000 FCFA, the other five background villages were allocated 40000 FCFA for development works. The impact of the money on community development cannot be underestimated. For example, in one of the frontline villages (Ngashie), 140000 FCFA was used to sponsor a water project and the surplus was used to buy roofing sheets to support a primary school building project. A background village such as Elak has recently been supported with construction materials for a bridge worth 50000 FCFA. The Emfveh-Mii CIG has recently carried out repairs on the Oku Rural Radio worth 43000 FCFA. A financial package of 250000 FCFA was given to the traditional authorities (Ngumba) as compensation for their serious engagement in the management of forests. Before the Forestry Law of 1994, the Ngumba was the sole custodian of the forest and they are still playing the role today in close collaboration with ASSOFOMI.

Livelihoods contributions of *Prunus africana* to Mount Cameroon people.

The revenue from *Prunus africana* production is collected and partly shared among communities in the Mount Cameroon area. The bark of this plant was worth US\$ 700000 to Cameroon in 1999 and US\$ 200 million to the pharmaceutical companies in consumer countries (CARPE, 2001). The share of revenue to local communities over a nine months period was US\$ 35700 (5.1%), of which US\$ 2260 (6.3%) was earmarked to a village development fund, 1530 (4.3%) to group functioning costs and US\$ 31920 (89.4%) divided among 60 members of the Mapanja *Prunus* Harvesters Union (Ndam and Tonye, 2004). This implies each member of the Union received US\$ 532. This is more than the GDP per capita of US\$ 500 for Cameroon in year 2000. Union members get 749% higher revenues than non-members in the Mount Cameroon area, as the average household income from *Prunus* harvesting is just US\$ 71 (Ndam and Tonye, 2004).

This union is a community-based organization in the Mount Cameroon area that has developed their own local benefits sharing system to guide and ensure equity in the revenue generated from *Prunus africana* harvesting. The major reason for success is that union members cut off intermediaries/middlemen from the trade chain. They also have greater access to market information and are less likely to be duped by dubious traders. The major lesson to be drawn is that when local people are organized, they make greater income from NWFPs activities.

3.2.2. Case Study 2. African grey parrots (*Psittacus erithacus erithacus*)

Ecology

The African Grey belongs to the Genus 'Psittacus'. In the Genus *Psittacus*, there is only one species, which is *erithacus*, and two subspecies, plus a questionable third. The first is the "Congo" Grey, *Psittacus erithacus erithacus*; the second is the Timneh Grey, *Psittacus erithacus timneh*; and the third, which is believed by many aviculturists to be a variation of *Psittacus erithacus erithacus*, instead of separate subspecies, is called *Psittacus erithacus princeps*, which originates in equatorial Africa (Wright, ud; Wright, 1996). The Timneh African grey comes from Western Africa: Sierra Leone, Guinea, Liberia and western Ivory Coast. Both subspecies make wonderful companions. They are good talkers, and with the exception of size and appearance, there is little difference in their personalities (Pattison, ud). When people refer to Ghana, Togo, Cameroon, Congo and Angola Greys, they are referring to the region or country from which these parrots originated. These names are 'street names' or simply variations of the same subspecies based on the areas in which they live. The Congo African grey parrot (*Psittacus erithacus erithacus*) has a black beak and bright red tail. The Timneh African grey (*Psittacus erithacus timneh*) is a darker grey, with a brownish-to-maroon colored tail and horn-colored upper beak.

In Cameroon, the African grey parrots are common in the Lobeke National Park (LNP) and its environs. The Lobeke National Park (LNP) covers an area of 2,125 Km² and is situated in the Boumba and Ngoko Division, Southeast Cameroon. One of the fundamental reasons for the immediate designation of Lobeke as a protected area (PA) is the broad range of activities that threaten to subvert the integrity of the forest irrevocably. Most of these are commonplace in many parts of Cameroon, but it is the increasing scale of the threats that singled out Lobeke for immediate attention. It is also important to note that any one of these activities may be considered a sufficient ground for government intervention, but the existence of all of these issues in Lobeke simultaneously serve to highlight the need for urgent action (Anon, 2001). The main threats to the forest and African grey parrots therein include:

- Destruction of nesting sites as a result of selective felling of the larger trees.
- Corruption and illegality in the pet trade
- Weak legislation and poor enforcement of laws where they do exist
- Increasing commercial timber exploitation and agricultural encroachment
- Unmanaged parrot trapping and unsustainable subsistence hunting
- Insecurity and weaker legislation in neighbouring countries

LNP is a dense semi-deciduous forest, characterized by a patchwork of high forest, secondary forest and low-lying swamp interwoven with a mosaic of maranthaceae forest, mono-dominant stands and forest clearings (Low, 2002; Ngenyi, 2002). The vegetation was fully described by Gartlan (1989), although summarized as being swamp /transitional-closed forest, part of the evergreen Cameroon-Congolese forest types. Whilst much of the habitat is natural, logging over the past 30 years has contributed to the opening of the canopy in several areas of the forest. This patchwork of the forest types promotes a high diversity and an abundance of mammals in the region. The large marshy forest clearings that characterized Lobeke forest eco-system are locally known as "bais". They are characterized by saline soils and/or riparian vegetation associated with marsh or dry grassland habitat, notably the Cyperaceae. Owing to their rich saline soils, the bais attract a lot of forest fauna including the African grey parrots.

A great number of African grey parrots and green pigeons frequent the baobabs for food, especially in the mornings during which parrot trappers make their catch. Generally, many animal species internationally recognized as endangered still thrive in the Lobeke forest and its environs, although they are increasingly threatened by unsustainable exploitation. More than 283 bird species are found in Lobeke forest including the widely commercialized species African grey parrots that are highly sought after in Europe, North America and many other countries as pets (Anon, 2001). Lobeke and its environs is said to be the highest parrot-trapping zone in Cameroon with 80% of parrots from Cameroon caught there (Low, 2002). According to Ngenyi (2002), out of 10 grey parrots exported from Cameroon, 7 originate from the Lobeke and southeast forest region. In other words these estimates suggest that 70-80% of parrots captured in Cameroon come from the East Province of Cameroon, particularly in the Lobeke forest and its environs. The other 20% are trapped from other tropical rainforest ecosystems such as those found in the Korup National Park and Lomie regions.

History of trade

The international Pet trade has been going on for many centuries. As early as 1865, exotic birds were traded in large numbers in the United States (Traffic international, 1992). Europe was the largest annual supplier of thousands of birds, though most of these birds were brought from Africa, Asia and South America. Since then, people have continued to use wild caught birds in captive environments as a source of meat, feathers, companionship and beauty; an age-old practice known particularly with the early Romans, Egyptians, Greeks and many others. Today, the pastime of keeping wild caught birds in captivity for pleasure varies from one culture to another. However, this practice is common throughout much of the world and it has given rise to international trade in wild caught birds, amounting to five millions birds in captive environments each year. Millions of birds are wrenched from their natural habitats to make quick money. The birds are then fed through a chain of middlemen and international dealers to meet the insatiable demands of private collectors in Saudi Arabia; Pet shops in Germany, Japan and the USA; zoos and circuses in Eastern Europe and folk healers in Asia (Traffic International, 1992).

It has been estimated that over 2 600 of the 96 000 described bird species have been recorded in international trade during the last 20 years (Inskipp et al, 1988). The trade has been estimated at US\$ 10 million (about 5 billion FCFA) a year (Toufexis, 1983). It is the third largest contraband business after drugs and arms (Tamungang, 1997). Available information from the United Kingdom, USA and three major exporting countries (Senegal, Tanzania and China) shows that the majority of birds in trade are Passerine or song birds (Order Passeriformes). *Psittacines* (Order *Psittaciformes*, which consists of parrots) form the largest group of birds in international trade. A net CITES report on trade in *Psittacines* for the years 1982-1988 ranged from a low number of 476 917 birds per year to a high number of 624 198, averaging 539 701 birds per year (Broad, 2001).

Africa is a major source of wild caught parrots in international trade. Popular African parrots in the trade include the African grey parrot (*Psittacus erithacus*), lovebirds (*Agapornis sp*) and members of the genus *Poicephalus* (e.g. Senegal parrot *P. senegalus*). CITES data shows that between 1981-1989, about 440 000 African grey parrots were traded internationally. Out of this figure, South Africa imported about 17000 (Inskipp and Corrigan, 1992). In another report Mulliken (1995) compiled figures from CITES Annual Reports and South African provincial permit data, which showed that between 1981-1993, a total of 43 132 African grey parrots were exported from 15 African countries including Cameroon. It has been estimated that over the last 15 years more than 500 000 African grey parrots have been documented in the International trade (Mulliken, 1995 cited by Tamungang, 1997). Therefore, the number of birds in the wild might be declining because of continuous trapping. The European Community, the USA and Singapore are the largest known importers of live birds. Thus,

the concern that the International trade in wildlife might drive some species to extinction if not properly controlled remains the main message of CITES (Tamungang, 1997).

The African grey parrot trade in Cameroon

The African grey parrot is the most hunted bird in Cameroon (Tamungang, 1997). Thousands of grey parrots are captured each year for local consumption and exports. It is also widely used in many cultures in Cameroon. Cameroon accounted for 50% of the total specimens exported from all countries in 1995 and is still one of the highest exporters of African Grey Parrots today (Ngenyi, 2002). Prior to 1993, when restrictions on export quotas were decided by CITES at 12000 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 (Tamungang, 1997).

Cameroon started to export African grey parrots to South Africa in 1993 with 2095 birds reported (Mulliken, 1995). Most of the African grey parrots from Cameroon are exported to the USA and the EU countries with France as transit point (Tamungang, 1997). Poaching of the African grey parrots is very rampant in Cameroon because the government has done very little to enforce anti-poaching laws. People who succeed to have 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 obeyed. Government officials are accused of conniving with trappers and licensees to exceed official quotas. Law enforcement officers at border posts are seriously corrupt that little bribery by smugglers motivates them to allow parrots across borders to neighbouring countries. However, severe law enforcement may not suffice to curb unsustainable exploitation because the 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 the people, provide alternative sources of income and show the local people how to take care of the resources themselves (Tamungang, 1997).

Stakeholders in the African grey parrot Business in Cameroon

There are about seven groups of stakeholders in the African grey parrots trade chain including the government, the licensees, the middlemen, the trappers, the local aids, the importers and the final pet keepers. The Government of Cameroon is the primary agent of the African Grey parrot trade because it issues licenses to individuals to capture and export parrots at a minimum price of 8000 FCFA per bird.

The licensees form the second group of stakeholders and every year they may number up to 20. These licensees generally do not have much field experience of birds to capture and are usually resident in the cities of Yaounde and Douala. Therefore, they enter into contract with a number of middlemen (known in the field as *Detenteurs*) to go down to the field and arrange for the capture of parrots. The licensees may sell to importers at an average price of 60 000 FCFA (US\$ 92) on the low side or 80000 FCFA (US\$ 123) on the high side. This seemingly high price is due to the high cost of treating birds in the 'quarantine' in Yaounde or Douala. In the quarantine, the birds are fed, dewormed with expensive drugs and subjected to cold climate. This treatment is aimed at producing high quality birds and to enable them acclimatize to the European climate while in Cameroon before they are exported. Trade in African grey parrots is a high-risk business because as many as 50% of birds may die in the 'quarantine' before the date for exports. However, treatment reduces the death toll and well-treated birds (high quality birds) attract higher prices from importers.

The third group of stakeholders is the middlemen (*Detenteurs*), who get direct contact with the trappers. The people that are seen buying parrots in the field from trappers are not the licensed holders; they are merely middlemen between the two groups. There are about 70 middlemen dealing with parrots in Cameroon. They get an average price of 20 000 FCFA (US\$ 30.8) per bird bought from them by the licensees in Douala and Yaounde.

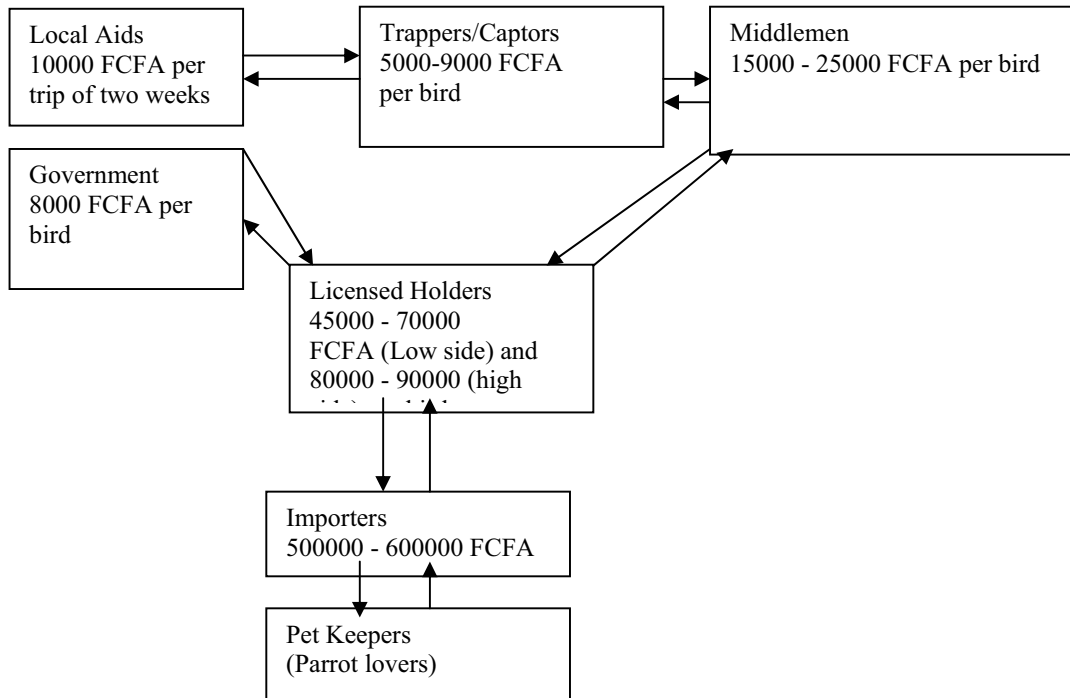
The trappers/Capturers form the fourth group of stakeholders. This group of people is fully engaged in trapping the parrots in the field. In the east province of Cameroon alone, there are believed to be between 30-40 parrot trappers, working with 3-4 local aids and having an average household size of seven persons. The trappers sell their birds at prices ranging from 5 000-9 000 FCFA depending on demand, giving an average price of 7 000 FCFA (US\$ 10.8). Over 99% of the trappers are from the Centre and Littoral provinces of the country. During the high capture season (January-April) trappers return to the bush twice a month according to demand. On lucky days, the number of birds captured is higher. On good days 60-70 birds may be captured. On bad days 20-30 birds may be captured. During the months of August, September and October, there is no capture of parrots because the rains are high and the 'bias' are flooded. The birds are captured using the net method, which does not discriminate the type captured in terms of age or sex. Therefore, all birds that fly are captured. After they are caught, the birds are transferred into bags, baskets, small boxes, or crates in which the trapper will take them home. They can spend days or even weeks in these containers being passed between dealers. Between capture and export, it's estimated that there is a 50% mortality rate (Low, 2002).

The fifth group of stakeholders is constituted by local aids. These are generally local people that assist the trappers in the trapping operation, caring for the birds in the 'quarantine' and transporting the birds out of the forest to the nearest road for vehicular transportation. These people are generally paid 10 000 FCFA (US\$ 15.4) per trip that may last 10-14 days in the bush. In all there are 90-120 local people assisting in the trapping of African grey parrots in the east province of Cameroon. They have an average household size of seven.

The sixth group of stakeholders is the importers of the parrots who do the big time business in Europe, South Africa or America. In the United Kingdom African greys may be sold for £500 or £600 British pounds per bird in pet shops depending on season (Pattison, ud). On average, importers in Europe sell each bird to the pet keepers in Europe at 500 000 FCFA (US\$ 770). In South Africa Mulliken (1995) reported a price range of US\$ 300 in July 1992 to US\$ 1 167 for a pair in December 1993. The biggest cry with importers is that they are known to transport the birds in very inhumane conditions. The Environmental Investigation Agency estimates that for every wild caught bird that reaches a pet shop, three others have died during capture, confinement, and transportation. It has been reported that birds have spent up to eight months at the holding premises of exporters before transport by air to their final destination. Studies of the conditions in which they are kept found they are overcrowded; show signs of distress; and lack food, water, and light. Symptoms of distress include feather plucking, dirty plumage, wounds, and exhaustion. The filthy conditions, overcrowding, excessive temperatures, and trauma increase disease susceptibility.

The last and seemly one of the most important groups of stakeholders is the pet keepers' (final consumers). These are the people that drive the demand for the African grey parrots. They offer handsome prices for each parrot imported. Summarized below is the schematic representation of the trade in African grey parrots in Cameroon (Figure 1).

Figure 1. Trade Structure of African grey parrot in Cameroon



Economic benefits of the African Grey parrot trade to stakeholders.

To what extent does the trapping in Lobeke and its environs supports its stakeholders?

Assuming available estimates of 80% (Ngenyi, 2002) of African grey parrots caught from Cameroon come from this region and taking into consideration the annual quota of 12000 (Dandjouma, 2002), 9600 parrots are caught each year from the East Province of Cameroon. In financial terms, the Cameroon government gets, at least, 8000 FCFA from each parrot sold, meaning that in total the government gets an average revenue of 76.8 million FCFA from the African grey parrot trade each year.

The licensees make an average amount of 60000 FCFA on the low side and 80000 FCFA on the high side per parrot bought and sold. This implies that the gross annual revenue of all licensees that buy the 9600 African grey parrots from East Cameroon may be estimated at between 576 million FCFA and 768 million FCFA. If these amounts are divided among the (20) average number of licensees per year, then, each licensee should have annual gross revenue of between 28.8 million FCFA and 38.4 million FCFA.

There are between 30-40 trappers in the East province of Cameroon, each working with 3-4 aids, who are local people. The average household size for trappers and local aids is seven, meaning that between 630 and 1120 people benefit in one way or the other from the trade of African Grey parrots in the East Province of Cameroon. Each African grey fetches between 5000-9000 FCFA for the trapper. This implies that if 9600 African greys are caught and sold by the trappers in the East

province of Cameroon, they would make gross revenue of between 48 million FCFA and 86.4 million FCFA, with each trapper possibly making gross annual revenue of between 1.2 million FCFA and 2.16 million FCFA.

With regards to the local aids, assuming there are nine active months during which parrots are captured in the field and two trips made per month, a total 18 trips are made in a year with each local aid paid 10 000 FCFA per trip (Mr Atangana, per comm.). This implies each local aid gets an annual income of 180 000 FCFA (US\$ 277), which is far below the annual gross national income for Cameroon and just about 15% of what the trappers can make or 0.63% of what licensees can make. The major difference here is that the licensee and the trappers incur some costs, which has not been estimated here but the local aids incur no costs out of their own labour.

Assuming the importers sell all the 9600 parrots from East Cameroon at the cited average price of 500 000 FCFA, then they can make gross revenue of up to 4.8 billion FCFA from the African grey parrots from the East Province of Cameroon. This is 1000 times higher than what the local trappers get, 62.5 times higher than what the government gets and 6-8 times higher than what the licensees get. At the national level, if the Cameroon quota of 12 000 grey parrots are exported and sold at an average price of 500 000 FCFA, then the international trade in African grey parrots from Cameroon is worth some six billion FCFA.

However, the statistics in this section are just indicative and have not taken into account the transaction costs of business at each level of the trade chain. It is suggested that an in-depth cost/benefit analysis to estimate the actual income accrued to each stakeholder in the trade chain would be very helpful for sound policy statements. Overall, it seems trappers of the African parrots and their local aids make far smaller sums of money than the other stakeholders. Most of the profits of the parrot trade seem to go to licensees and the importers. In this light, it may be erroneous to assume that the trade in African grey parrots is heavily contributing towards the financial support of local communities, meanwhile actually it is depleting local resources and enriching people from afar. This is in accordance with Low (2002), who stated that catching parrots makes very small sums of money for trappers or anyone else in the country of origin; most of the profits of the parrot trade go to already wealthy middlemen in the importing countries.

Appraisal of the impact of International trade in African grey parrots

Every year, an estimated 350 millions animals and plants are traded internationally; amid them are around five million wild birds. In the UK alone, 88% of the nearly 24 000 parrots, parakeets, lovebirds and other hookbills imported between 1995 and 2000 for the pet trade were wild caught birds (Ratty41, ud). A total of 66 species of birds are considered very threatened by the wild bird trade. Imported wild birds are usually cheaper than captive bred birds, and for this reason, people still buy them and they're still traded in such large numbers. Much of the trade of wild species is illegal and is flourishing and becoming increasingly organized. Moreover, there's no sure way of telling if birds in pet shops are captive bred or wild caught. If asked, the staff or manager will not know, lie, or avoid the question (Ratty41, ud).

After habitat destruction, the wild animal trade is one of the main factors aiding the extinction of many species. The habitat loss is more devastating than trapping because all animals in the area may be threatened or they may die or forced to migrate as the ecological web is disrupted. In this light, many wildlife conservationists and animal welfare groups see the international pet trade as an ecological disaster (Low, 2002; Tamungang, 1997). Thousand of grey parrots, for example, die during the process of trapping, transportation and domestication. Crude methods of trapping add to their death toll. Disease associated with caged birds, pose another threat.

The trade in wild-caught parrots is cruel, wasteful and unnecessary. The Environmental Investigation Agency estimates that for every wild caught bird that reaches a pet shop, three others have died during capture, confinement, and transportation. After they are caught, the birds are transferred into bags, baskets, small boxes, or crates in which the trapper will take them home. They can spend days or even weeks in these containers being passed between dealers. It has been reported that birds have spent up to eight months at the holding premises of exporters before transport by air to their final destination. Between capture and export, it's estimated that there is a 60% mortality rate (Low, 2002). Studies of the conditions in which they are kept found they are overcrowded; show signs of distress; and lack food, water, and light. Symptoms of distress include feather plucking, dirty plumage, wounds, and exhaustion. The filthy conditions, overcrowding, excessive temperatures, and trauma increase disease susceptibility (Ratty41, ud). Low (2002) concludes that trapping methods are inhumane and demonstrates the appalling treatment and rough handling of African greys being trapped in nets. This makes it the worst and most wasteful kind of trade because many adult parrots will die of stress after enduring days or weeks or months of intense fear.

Therefore, according to Low (2002) the trapping of adult birds should not be permitted because of the following reasons:

- Many can never adapt to a life in captivity. Wild-caught birds do not make suitable pets and are soon unwanted. Therefore, trapping eliminates populations.
- The breeding population is decimated as there is no discrimination against nesting mothers; and,
- Trapping deprives some mated birds of their partners and probably results in chicks starving to death in the nest.

Trade alone, or trade in conjunction with habitat destruction can and have, resulted in extinction. A number of formerly common parrot species have suffered catastrophic declines due to trapping. For example, the Lesser Sulphur-crested Cockatoo (*Cacatua sulphurea sulphurea*) is one of the 15 Critically Endangered Parrots of the world- solely due to over-trapping for the pet trade. A study in the late 1990s of the international trade in parrots listed by CITES found that 1.2 million parrots were exported between 1991 and 1996, with the majority of those birds coming from the neotropics. However, these international trade figures do not reflect the actual numbers of birds taken from the wild because they exclude pre-export mortality, which has been estimated to reach 60% of all birds trapped or taken from the nests, the substantial illegal international trade and the equally serious domestic trade (Low, 2002).

Cameroon accounted for 50% of the total specimens exported from all countries in 1995 and is still one of the highest exporters of African Grey Parrots today. With this high export number, two questions come to mind:

- Is the current rate of exploitation of African grey parrots from Cameroon sustainable?
- Apart for trapping and selling the African grey parrots for pets, can these birds in Cameroon be used to meet other economic gains on a more sustainable basis?

The answer to the first question is difficult to come by unless a thorough base line survey is carried out to estimate the population and breeding rate of the bird in Cameroon. This holds true considering that the annual export quota for Cameroon set at 12000 African grey parrots per annum was arbitrarily done and not based on any sound inventory data (Ngenyi, 2002). In order not to fall in an irreversible situation of depopulation of the species to a threatening level, getting answers to the second question might be an urgent and a more rewarding conservation drive even in the shorter-term. In this direction, comparative economic analyses of the current and potential contributions of various economic activities (pet trade, ecotourism development etc) involving the African grey

parrots to various stakeholders are suggested. This may throw light on the most feasible alternative solution to the current commercial exploitation of the African grey parrots for the pet trade. This alternative should be strategic enough to reduce trapping and provide economic support to parrot trappers and local communities.

The flocks of the African grey parrots in the Lobeke National Park suggest that alternative or complementary uses of the species might be possible and rewarding to both conservation and the development of livelihood opportunities for the adjoining communities.

Looking at the flock of African grey parrots in the photo above, one would wonder if parrot-oriented ecotourism could not be more profitable and more contributive to local livelihoods than trapping for the pet trade in the Lobeke forest. This potential has not been assessed as was done in Peru by Munn (1992). Munn (1992) found that free-ranging parrots could generate more foreign exchange for tropical countries and more local employment for local people when exploited indirectly as tourist attractions than when exploited directly for the pet trade. In this light it would be relevant to carry out further studies on the economic potentials of parrot-oriented ecotourism in Lobeke, especially with the current wave of more stringent laws against any form of trapping parrots in the park.

4. Application of trade related instruments to trade in NWFP in Cameroon

Due to the importance of NWFP to local communities, national governments and the international community, many local, national, regional and international initiatives and institutional arrangements have been organized to ensure that the benefits from NWFP are maximized and equitably shared and sustained. Good local examples include the ASSOFOFI and the MOCAP common initiative groups in Cameroon, involved with the harvesting and trade in *Prunus africana* on Mount Oku and Mount Cameroon respectively. At the national level, the Cameroon government have put in place legislatures and created committees and departments within the Ministry of Environment and Forestry to cater for regulatory and policy issues governing the production, processing and trade in NWFPs. Cameroon has a separate department for the promotion of the transformation of NWFPs in the Ministry of Environment and forestry (MINEF).

Some NWFP are traded at regional and/or international levels, meaning that the role of national legislatures and regulations may not suffice to control trade transactions in their products. The most discernible reason is that such products would be smuggled from countries where regulations are strong to countries where regulations are weak. This scenario would lead to poor reporting on production and trade in the product and would hamper any policy geared at ensuring in-country value-addition. In recognition of this fact, many international initiatives such as the CITES and the CBD are gaining strongholds to control international trade in NWFP. In addition, 1992 United Nations Conference on Environment and Development (UNCED) brought into focus under Agenda 21, Chapter 11 the promotion and development of NWFP through value addition, domestic processing, and promotion of small-scale forest-based enterprises for rural income and employment.

Many NWFP consumed or traded as food items, medicines or fashionable products are subject to restrictions and regulations on their use and commercialisation. The reasons for these controls are either economic, social, biological, political or a combination of these. Institutions manifest at local, national, regional and international levels. Overall, it is believed that trade-related instruments such as national regulations, CITES regulations, periodic bans and control tools can enable a more conducive environment for equitable and sustainable trade in NWFP from Cameroon. Some measures have been

taken but their overall impacts have not been fully assessed. The following sections are critical examinations of the measures in terms of impacts, gaps and ways for improvement.

4.1 Trade related Instruments affecting *Prunus africana* production and trade

Conventions and other international, regional, national laws and policies concerning the conservation and sustainable use of biological diversity, access to benefit sharing and the protection of traditional knowledge govern the exploitation of NWFP in Cameroon. Cameroon is a contracting party to the Convention on Biological Diversity (CBD) and the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES). The following section examines how trade-related laws and regulations have been used to control the trade of *Prunus africana* in Cameroon.

4.1.1. Cameroon Forest Legislation:

The Cameroon government has recognized the promotion of NWFP as a means to fight against poverty in rural areas and to generate revenue for the national economy. This was institutionalized with the creation of the Directorate for the promotion and transformation of forest resources in the Ministry of Environment and Forestry (MINEF) under Decree No. 98/067 of 28 April 1998. Two sub-departments were created, one for the promotion and transformation of NWFP and the other for wood products. The policy and regulations affecting the exploitation of NWFP in Cameroon are primarily influenced by the National Forestry Law No 94/01 of January 1994, which specifies forestry, wildlife and fisheries regulations. This covers regulations on the exploitation of *Prunus africana* in Cameroon.

Under Article 65(1) of the Framework Law on the Environment, “scientific exploration and biological and genetic resource exploitation in Cameroon shall be done under conditions of transparency and in close collaboration with national research institutions and local communities, and should be profitable to Cameroon (MCBCC, 2001). The exploration and exploitation should be done under the conditions stipulated by the international conventions relating thereto, duly ratified by Cameroon, especially the Rio Convention of 1992 on biodiversity.” The 1994 Forestry Law (Section 11) stipulates, “the genetic resources of the national heritage shall belong to the state of Cameroon. No person may use them for scientific, commercial or cultural purposes without prior authorization.”

The financial laws have some regulatory role on the exploitation and trade in NWFP in Cameroon, especially with regards to the taxes and fees paid. Article 11 of the 1999 Finance Law fixes an arbitrary tax of US\$ 0.018 kg⁻¹ of any NWFP harvested and a fee of 5% on any NWFP exported. The impact may be very minimal as the tax represents less than 1% of the value of end products.

In addition, MINEF has identified *Prunus africana* as one of the six most important NWFP in Cameroon that needs to be promoted for socio-economic development. However, the only national legal protection afforded specifically to *Prunus africana* in relation to trade in its bark was a temporary ban on its exploitation in Cameroon in 1991, which was lifted in 1992. Despite an official ban in 1990/1, greater quantity (3900 tons) of *Prunus africana* was harvested and exported between 1991 and 1992 than in any preceding year, indicating the high level of corruption in production zone (Cunningham et al., 1997).

Appraisal of National laws and regulations

The exploitation of *Prunus africana* on Mount Cameroon began in 1972. The files of the Provincial Service of Forestry for the South West (now Provincial Delegation for Environment and Forestry) indicate that exploitation of medicinal plants was regulated only by Decree No. 74/1357 of 17 April

1974, which suggests a two-year period of exploitation without a policy framework (Laird and Lisinge, 1998).

Following negotiations with the government in January 1975, Plantecam began official exploitation of *Prunus* in 1976, soon after it was issued a Special Permit - No.536/MINAGRI/DEFC of October 8, 1976. This Special Permit covered exploitation of 500 tons of *Prunus africana* from both the North West and South West Provinces.

Since 1974 the legal and policy framework for *Prunus africana* has been in constant flux, with a number of different measures by the government of Cameroon (GoC) influencing the manner in which *Prunus* is harvested and how local communities benefit from its exploitation. These include the following:

- Decree No.74/357, 17 April, 1974 - Sections 74, 97 98 - Regulates the exploitation of medicinal plants.
- Law No. 81-13, 27 November 1981 - Lays down Forest, Wildlife and Fisheries Regulations.
- Decree No. 83-169, 12 April 1983 - Lays down Forestry Regulations.
- Arrete No.48/A/MINAGRI/DF, 28 February 1991 - Banned the exploitation of *Prunus africana* in Cameroon (exempting Plantecam).
- Arrete No. 48/MINAGRI/DF, 14 February 1992 - Lifted the ban on *Prunus africana* exploitation.
- Decision No. 0045/MINEF/DF, 11 January 1993 - Banned felling in the exploitation of *Prunus*.
- Law No. 94/01, 20 January 1994 - Lays down Forestry, Wildlife and Fisheries Regulations, which cover *Prunus africana*.
- Decree No. 15/ 531/PM, 23 August 1995 - Lays down Forestry Regulations (Hall et al., 2000).

The 1994 law (No. 94/01) is considered a major improvement on the previous 1981 Law, since it attempts to at least address the need to rationalize the forestry sector, conserve and sustain biological resources, increase the contribution of forest resources to development, and to improve the lives of local communities and forest dwellers. Two major changes in the 1994 Law relevant to the exploitation and trade of all special forest products including *Prunus africana* are: 1) The applicant must first be granted approval for forest exploitation activities (Section 41 of the Law) from the Prime Minister's office, and then seek permission from MINEF - this creates a two-tiered system of control; and 2) The Provincial Chief of forest must attach a technical report, which specifies the species and quantities to be exploited, the area in which exploitation will take place, and the harvesting modalities to be used (Article 59 (2b) of Decree of application (Hall et al., 2000).

Based on the above steps, and in accordance with the recommendations of the Ministry technical commission, a special permit can be issued. Holders of special permits are responsible for obtaining forestry Service specifications, which detail the conditions for exploiting and transporting natural products, and the terms and conditions for paying taxes. Following the presentation of a copy of the permit and the receipt or payment of taxes, the Provincial Chief of Forest can authorize a start to exploitation.

The 1994 Law (94/01) requires that the following guidelines are given to any person or company interested in the exploitation of *Prunus africana* bark:

- Stamped application to the Ministry in charge of forest specifying:
 1. Full name, nationality, occupation and place of residence (for individuals)
 2. Name, Articles of Association, Head Office, Registered Capital and its distribution, and name of the Director or manager (for Companies)

- The capital invested (Attestation)
- The applicant's investment plan and the financing guarantee (means of transportation envisaged, existing storage facilities and other facilities to be set up, measures taken to process part of the product locally).
- List of species and quantities to be exploited, as well as the location.
- A signed undertaking that the applicant understands and will abide by the regulations and will cooperate with the Forestry Service.

A Ministerial Committee sits at least twice a year to grant exploitation permits for *Prunus africana* and other medicinal and NWFP. After permits are issued they remain valid for one year, but are renewable pending production of the following:

- A stamped application
- A copy of the previous permit
- Receipts testifying the payment of the registration fee and the selling price of the product
- Copies of certificates of origin, if the holder exports the product
- A detailed report of the activities of the previous seasons, specifying the quantities of the products exported or processed locally.

The 1994 Law refined the previous procedure by requiring the Provincial Chief of Forestry to attach a technical report specifying the methods for harvesting and the quantity of each species to be exploited (Hall et al., 2000).

In addition to these provisions, the 1994 Law goes further in introducing articles on financial and fiscal measures for the benefit of local communities i.e. S.67 (2) and 68 (2) and (3). These articles grant benefits to local councils, however, which means they will not always find their way to the local population. Community-control over forest resources is generally in flux as a result of the 1994 Forestry law innovation of "Community Forests" (Article 37). The 1994 Forestry Law classifies the national forest estate into two categories of forest: permanent and non-permanent forest. The permanent forest includes gazetted state forests and national parks while non-permanent forest includes communal, community and private forests.

Within this context, broad categories of land tenure and resource use influence *Prunus africana* management options and where permanent responsibilities rest. In Cameroon, stricter national regulations apply to permanent forests than to communal forest. Nevertheless, the use of communal forests depends on the conditions of access and exploitation spelt out in their original charters. In a communal forest, members of the local community can freely exploit natural resources for traditional uses, in accordance with customary rights of use and access. However, they cannot exploit *Prunus africana* for commercial purpose without acquiring a special permit. This is the most common form of land tenure system in the Kilum/Ijim forest area in Oku and Kom, where the harvesting and sales of *Prunus africana* remains the primary responsibility of the community. A third category in Cameroon is open access land tenure, where it is difficult to determine who controls what. It is here that conflict and competition arise between different groups of users and where much of the illegal and destructive harvesting of *Prunus* bark takes place. Neither the local people nor the state is able or willing to exert much control over open access land (Hall et al., 2000).

Despite these improvements, over-exploitation of forest resources continues since effective implementation of the law has not yet been achieved (Laird and Lisinge, 1998). Prior to 1987, Plantecam Medicam, as it was known then, operated within a strict monopoly in the exploitation of *Prunus africana* in Cameroon. They set and adhered to strict harvesting guidelines such as no felling

and no girdling but only the stripping of opposite quarters of the tree to allow for bark regeneration. Thereafter, a breakdown in this monopoly came with the issuance of licenses to 50 companies and individuals. This led to a dramatic increase in field operatives working in an area with corresponding increase in unsustainable practices, notably the felling of trees, total bark removal and non-respect for quotas set. The lesson to be learnt here may be that increasing commercial competition without putting in place adequate management regimes, based on sound inventory data may lead to a corresponding increase in the amount and intensity of bark exploited. Therefore, the issuance of permits is not necessarily a guarantee of sustainability, especially when permits are issued with no harvesting controls being implemented (Sunderland and Tako, 1999).

4.1.2. CITES Legislation

The over harvesting of *Prunus africana* bark, primarily from the wild in Cameroon has had a devastating effect on wild populations of the species. This overexploitation sparked conservation concerns, resulting in the species being listed in Appendix II of the Convention on International Trade in Endangered species of wild Fauna and Flora (CITES) in 1994, becoming effective in 1995 in order to monitor the species in international trade. CITES Appendix II status does not mean that *Prunus africana* is necessarily threatened with extinction, but that it may become so unless its trade is subject to strict regulation. The Scientific Authority of an export country advises its Management Authority on the sustainability of a consignment and, ideally, the export permit would be based on sound inventory and management information (Hall et al., 2000; Sunderland and Tako, 1999).

In theory, this means that countries of export have to issue export permits and countries of import have to check these permits upon entry (Hall et al., 2000; Cunningham, *et al.*, 1997). The implication is that both exports and imports need to be monitored with export permit strictly based on sound inventory and management information (Ndam, 2004; Sunderland and Tako, 1999). This should ultimately mean that the bark entering the importing countries is harvested from a sustainable source. However, the reality is somewhat different with unsustainable exploitation of *Prunus africana* still commonplace and quotas and permits are being issued without reference to adequate biological baseline information (Sunderland and Tako, 1999). However, monitoring the trade of *Prunus africana* is difficult, partly because it is traded in five different forms – unprocessed dried bark, bark extract, herbal preparations in the form of capsules, as a constituent of a hair tonic and as wood.

However, the impact of listing *Prunus africana* by CITES has been partially effective in reducing threats because it has helped to raise awareness about the problems posed by international trade. The current and forecasted markets for the natural products and derivatives of *Prunus africana* are European countries, Canada and the USA. Being parties to CITES, these countries are obliged to honour CITES provisions regulating the import of natural products. In addition, their national regulatory bodies, such as the Food and Drug Administrations of both Canada and USA, can further influence the supply-demand by limiting how imported natural products can be used and sold. In France for example, the bark extract of *Prunus africana* can be sold as a medicine. In the USA, it can only be sold as a herbal dietary supplement. In the UK, it cannot be sold for use as a medicine or dietary supplement (Hall et al. 2000). Nevertheless, the quality of reporting to CITES is inadequate, especially on the part of importing countries (Schippmann 2001).

Several non-governmental, governmental and international bodies are now involved in programmes to promote sustainable management of wild populations, cultivation and monitoring of the trade. For example, for some years the Mount Cameroon Project has been working with villagers to promote the sustainable management of *Prunus*. Villagers are involved in monitoring the forest to guard against *Prunus* poachers and to help ensure, in the event of legal harvest, that only a part of the bark is removed (Ndam, 2004). It is hoped that this and similar efforts will suffice to ensure that future

supplies of the bark are harvested in sustainable ways. However, the annual sustainable harvest level of *Prunus africana* in Cameroon has always been exceeded (Tieguhong, 2003). For example, in the Mount Cameroon area, the annual sustainable harvest level has been estimated at 209 tons, but each year over 500 tons are harvested, most of it, by illegal operators (MOCAP, 2004).

4.1.3. The Convention on Biological Diversity (CBD).

Cameroon became a Party to the Convention on Biological Diversity (CBD) at around the same time the World Bank was exerting pressure to reform the country's forest policy. As a result of these events, the government adopted a new Forestry Law No. 94/01 of 20 January 1994 on Forestry, Wildlife and Fisheries. Decision III/14, paragraph 3 relates the "interactions between traditional and other forms of knowledge relating to conservation and sustainable use of biological diversity; the influence of current laws and policies on knowledge, innovations and practices of indigenous and local communities embodying traditional lifestyles relevant for the conservation and sustainable use of biological diversity". To a lesser extent, Decision III/15, paragraph 2, dwells on access to and benefit sharing from genetic resources.

In response to this and in an effort to reduce overexploitation and generate greater benefits for local communities from the commercial use of *Prunus africana* bark, an agreement - "*The Agreement for Sustainable Management and Production of Prunus africana at Mapanja Village*" - was signed between the main purchasing company, Plantecam Medicam, and the village of Mapanja in 1997. This agreement outlined general benefits for the village (e.g. increased revenues from higher payments per ton collected; training in sustainable management techniques) and serves the wider conservation objective of managing this species sustainably. The major impact of the agreement on conservation and development of *Prunus africana* is that the local people attest a drastic reduction in illegal and unsustainable harvesting of *Prunus* bark in most areas, increased economic benefits to the village and better monitoring of harvesting activity after the agreement was signed (Hall et al., 2000; Laird and Lisinge, 1998).

4.1.4. NWFP Certification and trade

Forest certification remains one of the most contentious issues in international forest policy because it is a trade-related instrument and countries feel that it could influence their competitiveness and market access (Eba'a Atyi and Simula, 2002). This is explained by the fact that it may be difficult to achieve certification status for forest products because of the possibilities of increased costs of production and uncertainties of market benefits for local producers and traders, especially in the short-run.

With regards to NWFP harvesting and trade, they are coming under increasing scrutiny from certification programmes because of their key roles in the sustainable management of forest resources worldwide. Certification is a market-based tool that is becoming a hot topic in many natural resource sectors. According to Dankers (2002) and cited by Walter (2003) certification is a procedure by which written assurance is given that a product, process or service is in conformity with certain standards. It is often linked to the provision of labels for certified products, processes or services. A certification logo or label enables potential customers to differentiate products, based on the social and environmental 'qualities' of the commodity they decide to buy.

This market opportunity is to motivate many producers to adapt their management practices to meet certification criteria (Mallet and Marion, 2000), giving certification its primary function of bringing positive environmental and social changes in resource stewardship. Producers and harvesters can use

certification criteria everywhere as a model for best practices. As explained by Rametsteiner and Simula (2001), forest certification is driven by a variety of interests. For industry and trade, it is an instrument for environmental marketing. For buyers and consumers, it provides information on the impacts of the products they purchase. For forest owners and managers, it is a tool for gaining market access or market advantage, or perhaps for capturing price premiums. It also serves to demonstrate responsible forest management through independent third party certification regardless of what the market wants. For the environmental movement, it is a way of influencing how production forests are managed. For governments, it is a soft policy instrument to promote SFM, sustainable consumption patterns and a variety of other environmental and social goals. For investors, it can help in risk mitigation.

Certification is only one tool among many to move towards more sustainable production systems. It will take further refinement of certification programmes to meet local realities, more producers and harvesters willing to test the certification market, and increased demand by consumers for certified products before the full benefits of NWFP certification are felt. *How can certification help in the trade of Prunus africana in Cameroon?* This is a tricky question. However, the obvious answer lies in the fact that despite the gentler, safer and natural treatment qualities of the *Prunus africana* tablets, some retailers of complementary medicines refuse to stock them because they cannot guarantee that the bark has been harvested sustainably. In this light, certification can help in assuring retailers that raw materials for the tablets were harvested from a sustainably managed forest in Cameroon.

According to Walter (2003) there are four main categories of certification schemes that are of major relevance to the production, processing and commercialisation of NWFP

- Forest management certification;
- Social certification;
- Organic certification; and
- Product quality certification

Certification entails costs but local NWFPs producers can group themselves to make the cost of certification cheaper. With lower costs and the strong consumer recognition for organics, certification may be most appropriate for many NWFP harvesting operations (Mallet and Marion, 2000).

Fairtrade is also an option for NWFP certification although only for southern producers. To qualify as a Fairtrade product, producers must fulfil specific criteria relating to social conditions of workforce such as paying a minimum wage, respecting terms of employment; also there are conditions for profit sharing and investing back into the community. If a producer fulfils these criteria, his products qualify for fair Trademark and access to fairtrade markets (Mateke, 2001). Fair trade is beneficial for small producers since its primary focus is on ensuring that they receive a fair deal for their products. Secondly, the costs of certification are borne by the retailer and consumer rather than by the producer.

4.1.5. The International Organization for Standardization (ISO)

The awareness of quality criteria is increasing in the developing countries and new regulations governing safety of products, quality specifications and good manufacturing procedures are being enacted. The International Organization for Standardization (ISO) is very important for establishing, controlling and approving quality and environmental standards for industrial products. There are two generic ISO families that are of relevance to the production, processing and trade in NWFP. These include the ISO 9000 and the ISO 14000 families. The ISO 9000 and ISO 14000 families are among ISO's most widely known standards. ISO 9000 and ISO 14000 standards are implemented by some

634 000 organizations in 152 countries. The ISO 9000 has become an international reference for quality management requirements in business-to-business dealings, and ISO 14000 is well on the way to achieving as much, if not more, in enabling organizations to meet their environmental challenges (ISO Brief, und).

The vast majority of ISO standards are highly specific to a particular product, material, or process. However, the standards that have earned the ISO 9000 and ISO 14000 families a worldwide reputation are known as "generic management system standards" (Cascio and Schideler, 1998).

"Generic" means that the same standards can be applied:

- to any organization, large or small, whatever its product
 - including whether its "product" is actually a service,
 - in any sector of activity, and
 - whether it is a business enterprise, a public administration, or a government department.

"Generic" also signifies that no matter what the organization's scope of activity, if it wants to establish a quality management system or an environmental management system, then such a system has a number of essential features for which the relevant standards of the ISO 9000 or ISO 14000 families provide the requirements (ISO brief, und). Therefore, the enterprises involved with the production, processing and marketing of NWFP such as *Prunus africana* and the African grey parrot can employ the ISO guidelines to ensure high quality and environmentally sensitive trade.

The ISO 9000 family is primarily concerned with "quality management". This means what the organization does to fulfil:

- the customer's quality requirements, and
 - applicable regulatory requirements, while aiming to
 - enhance customer satisfaction, and
 - achieve continual improvement of its performance in pursuit of these objectives.

On the other hand, the ISO 14000 family is primarily concerned with "environmental management".

This means what the organization does to:

- minimize harmful effects on the environment caused by its activities, and to
- achieve continual improvement of its environmental performance.

The benefits of the ISO 14000 EMS gives organisations the tools to monitor and improve their impact on the environment. As a result, having one may help you to

- assure customers of your commitment to demonstrable environmental management;
- maintain good public relations;
- satisfy investor criteria and improve access to capital;
- obtain insurance at reasonable cost;
- enhance your image and market share;
- meet your clients' registration requirements;
- improve cost control;
- reduce incidents that result in liability;
- demonstrate reasonable care;
- reduce your consumption of materials and energy;
- obtain permits and authorizations;
- reduce the cost of complying with environmental regulations;
- develop and share environmental solutions; and
- improve industry-government relations (Cascio and Schideler, 1998).

Processed products must comply with national and international specifications. There are International Standard Specifications for most processed NWFP. In addition to these, importing countries and buyers may have their own requirements. Export products also involve legal requirements governing registration and packaging. Furthermore eco-audit procedures will be required for safeguarding environmental damage. The ISO 14000 series adds an environmental dimension to the quality standard. This will be equivalent to the European eco-audit and management scheme (EMAS) currently in effect in Europe. These requirements have to be taken into account when planning industrial production of NWFP in developing countries, as ISO regulations will have an impact on marketing of the products.

4.1.6. General Agreement on Trade and Tariffs (GATT) and The Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPs)

This series of agreements aims to deregulate international trade by reducing tariffs and encouraging multilateral negotiations on trade issues. It paved the way for the establishment of the World Trade Organization in 1995 as a more powerful Organization for resolving disputes. TRIPS aims to clarify intellectual property rights (patents, trade secrets, trademarks) and measures for enforcing these rights (WTO, 2003).

Like the WTO, TRIPS strengthens and provides more enforceable protection for trade-related intellectual property rights (WTO, 2003). It encourages developing countries to conduct more research and innovation, and helps better access to new technology, including environmental technology. The current situation is inequitable because European and American companies own most of the patents to African high valued plant-based NWFPs such as devil's claw, *Prunus africana* etc. This is because industrial research is carried out in developed countries. In most cases such research is focused on cheaper synthetic substitutes as soon as a new useful natural product is discovered. On this note, African countries have to safeguard the property rights of the original resource with international conventions, while at the same time developing higher-yielding and disease-resistant varieties through genetic improvement to ensure sustainable supply of plant material at competitive prices.

4.1.7. Complementary measures

Complementary international measures seek to improve conservation prospects by increasing awareness of threats to the viability of populations, which are especially severe in certain areas, and perceived declines in the abundance of the species worldwide. *Prunus africana* is listed in the Tree Conservation Database of the World Conservation Monitoring Centre (World Conservation Monitoring Centre, 1999, cited by Hall et al., 2000) as a vulnerable species, considered to have suffered a population decline of at least 20% over the last three generations following a decline in area of occupancy, extent of occurrence and /or quality of habitat and exploitation.

Further international action has been taken under FAO auspices, through the FAO panel of Experts on Forest Genetic Resources. By the 8th session of the Panel in June 1993, *Prunus africana* had been widely publicized as a valuable source of pharmaceutical products. Concerns over sustainability were being voiced and the Panel reinforced these by placing the species on the conservation priority list (Hall et al., 2000). The Panel stressed the need for information on variation, biology and population status as of high priority, and indicated an equally urgent need for *in situ* conservation action and for provenance and progeny testing to start. During the next session in 1995, *Prunus africana* remained a high priority species for FAO conservation attention despite a revision of the African priority

indigenous species from 80 to 13 (Hall et al., 2000). *Ex situ* conservation action became an additional priority with *Prunus africana* and action to improve seed supply was recommended.

4.2.Trade-related instruments affecting trade in African grey Parrots in Cameroon

Both national and international actions and controls exist and regulate the trade in African grey parrots. The major predicament lies with inefficiencies in the process of implementing the rules and regulations, be they national or international.

4.2.1. Regulations on the capture of African Grey Parrots in Cameroon

In Cameroon, there is a procedure for the attribution of quotas for the trapping of the African Grey parrot under the auspices of the Ministry of Environment and Forestry. The season of capturing parrots in Cameroon is not very precise but the validity of permits to capture ranges from the first of January to the 31st of December of each year (Dandjouma, 2002). An advertisement is usually made by MINEF stipulating the requirements for bidders to apply for the 30 lots of 400 parrots opened for capture in a given season. Bidders send in their applications and winners of lots are selected by merit based on amount of money offered per lot and technical competence. The lots are then attributed to the selected persons by a ministerial decree, with the advice of a technical consultative commission on the quotas of parrots to be captured by each winner of a bid. The technical commission is usually comprised of:

- A president, who is a representative of MINEF
- Members made up of:
 - Director of forests,
 - Chef of legal Division,
 - Permanent Secretary,
 - Director of Wildlife and protected areas, who act as the secretary and rapporteur of the commission and
 - A representative of the association of trappers.

The names of the tenders alongside their quotas for the year are made public on the national press. The tenders are given a maximum of 45 days to settle their financial obligations for their quotas, which include the tax per parrot captured and the special fee for the Wildlife protection fund lodged in the Directorate of Wildlife and Protected Areas in MINEF. The selected tenders have a 45 days deadline from the date of the signing of the said decision to the release of their financial bids/offers through the payment of taxes to the incomes officer/manager and the accountant for 'Special funds' for the protection of wildlife of the MINEF Department of Wildlife and Protected Areas (DFAP). Tenders (authorized 'trappers') obtain a receipt after submitting 10 certified true copies (made up of nine copies and 1 original) of a technical and administrative offer before the expiry of the deadline, and also a financial offer. The package relating to the technical and administrative offer contains the following:

Administrative file

1. Legal authorization document
2. Taxation certificate
3. Bank statement worth a million francs CFAF

Technical file

1. List of permanent personnel
2. A plan on the hiring of the company
3. Equipment that will be used
4. Copies of license
5. Sworn statement

The stamped and sealed envelope of the financial offer contains indications of the additional amount the tender proposes to pay in relation to the minimum hunting/trapping tax, which is 8.000 FCFA per bird. The said envelope is submitted separately from the technical and administrative files.

The monitoring of the exploitation of these birds is carried out in the field by the persons in charge, and officials of the external services of the Ministry of Environment and Forests (MINEF) through the evaluation of the amount often collected by authorized or non-authorized trappers from authorized or non-authorized trapping areas. These birds are not always packaged with care; hence there are many cases of deaths that can be noticed in the collection areas, up to the pre-exportation phase. A deductible quota form (*fiche de décompte des quotas*) jointly signed by DFAP and the MINEF officer nearest the trapping site, specifies the quantity collected in relation to the fixed quota, and also indicates the remainder. It should be noted that government law enforcement officers accept only the original version of this document.

Exportation of African grey parrots

The monitoring of the *exportation quota* of animals under the CITES quota exportation system is performed at the central level (DFAP) by the Chief of service in charge of preparing exploitation licenses. This wildlife exploitation license can be extended over a maximum period of three months. It is granted upon the presentation of a certificate of non-use signed by the MINEF officer of the corresponding exit station.

The chief of service who draws up exportation licenses has a list for the monitoring of quotas for each species under an exportation quota. A deductible quota form is attached to each exportation license, prepared for signing by the Cameroon CITES Management Committee; who could be the same Chief of service, indicating the total number of species already exported (including that of the current license and the remaining quota of this species for Cameroon).

Any request for an exportation license sent to the Management Committee must specify the airport or the port through which the specimens will be dispatched. This exit station is mentioned on the corresponding exportation license; the exporter is not allowed to change the exit station after the signing of the license. Copies of the corresponding deductible quota form is always attached to the signed exportation license, which is immediately faxed or sent to the CITES secretariat and the MINEF officer in charge of the corresponding exit station.

MINEF provincial delegates in charge of auditing exportation licenses obliterate CITES stamps by using perforators, and must send a monthly report to DFAP on the situation of exports and the apprehension of any case of fraud noticed on CITES exportation licenses.

Difficulties encountered in monitoring of activities in areas of capture in the field

- Trapping zones are not always well defined;
- Monitoring of quotas allotted to tenders is not always effective;
- Surveillance personnel are insufficient;

- The trapping period is not always known in advance, as in professional sport hunting.
- Corruption and increasing crime waves such as smuggling and theft, lay the ground for exceeding export quotas. This renders the species increasingly threatened. Crooks and illegality have been attracted by a huge rise in prices caused by international sanctions against the trade in wild birds (Earth Crash, ud; Pattison, ud). For example, the African Grey parrot is reported to fetch around £600 in the UK (Pattison, ud).

4.2.2. Impact of CITES on African grey parrot trade in Cameroon

Cameroon is a signatory to the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES), also known as the Washington Convention. The main aim of the convention is to protect species likely to face extinction following uncontrolled exploitation to meet the demands of international trade. According to the degree of threat to which trade in wild-caught birds would impose on a species, it is listed under three Appendices. On Appendix I are the species threatened with extinction on which international trade would have a catastrophic effect. On Appendix II are species that could be threatened if export was not regulated effectively. Trade in these species is permitted if it is sustainable and the specimens were obtained legally (Low, 2002). Also on Appendix II are the offspring- but not those of the first generation- of species on Appendix I. The treaty was signed in March 1973. On June 6 1981 nearly all members of the parrot family, excluding those listed in Appendix I, were placed on Appendix II (Low, 2002). A control system such as annual quota is put on imports and exports of listed species.

With regards to the African grey parrot, which is an Appendix II species, Cameroon was forced to set a quota for the trade in these birds in April 1994. CITES Animal committee asked Cameroon of her quota recommendation on trade in African grey parrots in November, 1993 but Cameroon did not respond. The standing Committee then called on all parties to suspend imports of the species from the country (CITES Notification No. 775, 23 November, 1993). The ban was lifted five months later when Cameroon announced an export quota of 12000 African Grey parrots for 1994 (of which 5500 were stocks held within Cameroon) and agreed to adhere to specific quota recommendations made by CITES Animal Committee (CITES Notification No. 800, 21, April 1994). An export quota of 12000 birds was established for 1995 (Table 2).

Table 2: Annual Quota for trapping African grey parrots in Cameroon

Year	1994	1995	1996	1997	1998	1999
Quota	12000	12000	12000	12000	12000	12000
Exports	11602	15743	21266*	767	12545	15220**

Source: CITES, 2001. Field project completed in 1998: Fotso, R. Suvey Status of the Distribution and Utilization of the Grey Parrot (*Psittacus erithacus*) in Cameroon. IUCN. **Projection

Cameroon CITES management organ divides the annual quota of 12000 birds into 30 lots of 400 parrots. These lots are numbered 1 to 30. These lots are annually auctioned by the CITES management organ of the Ministry of the Environment and forestry (MINEF) in Cameroon. The professional school on wildlife based in Garoua represents the scientific organ of CITES in Cameroon (Dandjouma, 2002).

Appraisal of the Effectiveness of CITES

In Cameroon, CITES has some impacts but not enough to control exports. This is the only global treaty or multilateral environmental agreement (MEA) that regulates the international trade in wild plants and animals and aims to protect species whose conservation status is threatened by such trade. According to Low (2002) it is unfortunate that some countries that trade in enormous numbers of wild-caught parrots are not signatories and parrots on Appendix II continue to be trapped and exported without research data to indicate whether trade is sustainable. Annual quotas, such as those established by the governments of Cameroon are not based on research and might have been, or still are, in excess of sustainable trade levels (Low, 2002).

Imports were suspended in November 1993 as a result of a lack of response to request for information on the scientific basis of Cameroon's export quota (CITES Notification No. 775). In November 1996, the CITES Secretariat recommended that the Parties reject permits from Cameroon as its 1996 quota was exceeded, later found to be by 11,000 birds (CITES Notification No. 945). In October 1997, the CITES Standing Committee recommended that Parties not to accept any imports of the species from Cameroon until 31 December 1997, stating that the 23,000 birds exported in 1996 covers the quota of 12,000 specimens for both 1996 and 1997 (CITES Notification No. 993). Prohibition was revoked in March 1998 (CITES Notification No. 1998/05) but export quota exceeded again in 1998 and 1999 by a total of 3,765 specimens (CITES, 2001). This situation does not seem to be not unique to Cameroon in the Central African region as the Democratic Republic of Congo (DRC) exceeded its annual quota of 10000 birds by 7480 in 1999 (CITES, 2001). According to Ngenyi (2002) the trade in African Grey Parrots has been for the past years a lucrative business in Cameroon with almost every sector trying to get its own share of the cake. Although this trade was prohibited in Cameroon in 1997, trappers nevertheless continued to trap. Since then, the situation has not changed in Cameroon. She remarks that the annual quota for Cameroon is 12,000 Grey Parrots, but each year more than 15,000 are exported meaning CITES suspension decisions may not form the sole tools to control the trade in this valuable species. In addition, what may be more relevant is to re-examine the national legislation to control and regulate this trade. This will lead to a sustainable management of this very important bird species and a limitation of parrot laundering through other countries.

4.2.3. Role of importing governments on bird trade

In 1990, the CITES Animals Committee formed a Working Group on Bird Trade to examine the international trade in wild caught birds more closely. The trade has been placed on agendas of national governments in major consumer markets in the USA and Europe. In the USA, The Cooperative Working Group on Bird Trade, composed of representatives from conservation, animal welfare, avicultural and pet industry organizations, developed a series of recommendations to address problems associated with the trade. The Wild Bird Conservation Act became law in 1993 in the USA (Low, 2002). The Wild Bird Conservation Act requires a moratorium in one year on most of the half million annual wild-caught bird imports to the USA. Therefore, the Law prohibits the importation of all wild-caught parrots except in certain rare circumstances.

In Europe, the European Parliament has adopted a resolution calling for a ban on European Union (EU) imports of wild caught birds for the pet trade in response to a campaign launched by the animal and bird protection organizations. This ban is however, not yet passed into Law in Europe and elsewhere like in the USA (Low, 2002) , although highly recommended by conservationists. Traffic International (1992) noted that the international bird trade would remain the subject of debate for some time so come, regardless of the forum for discussion. Toufexis (1983) reiterated that

implementing the CITES treaty remains a huge problem as does enforcing the tough laws against smuggling that exist in many nations. The laws are adequate but the enforcement is weak.

For example, the analyses of legal trade in wildlife and shows that Britain plays a big role in Europe's annual consumption of more than 20 million live plants and animals. A remarkable 96% of these are taken from the wild. In the UK, 88% of parrot imports were wild-caught, dispelling the myth that most birds on sale in the UK are captive-bred (Earth Crash, ud). Therefore, the UK's situation is indicative of double standards. In most circumstances trapping of native birds is illegal, as is taking their eggs or even disturbing them at their nest, and can result in a prison sentence in the UK. Yet they legally import thousands of wild-caught birds from other countries (Low, 2002). On this note, Low (2002) recommends that Europe should follow the example set by the USA. This would lead to guaranteeing better protection for wild birds in the current review of European Union wildlife laws.

4.2.4. Impact of campaigns and boycotts on the trade in African Greys

Conservation organizations campaigning against trade in wild caught birds have been delighted at the response from airlines. Animal welfare organizations have succeeded to convince many airlines to stop carrying wild caught birds. By end of 1991, 41 airlines had accepted not to carry such birds and by July 1993, over 100 airlines had complied with the refusal to carry wild-caught birds (Tamungang, 1997). The director of Kenya Airways appeared on Kenyan TV to announce that the airline would become the one hundredth airline with a wild bird embargo, following lobbying from campaigners. According to ESPB et al. (1992) report, the trade in African grey parrots worldwide had fallen to around a half of former levels due to the campaigns and embargos by mid 90s. But the evidence clearly shows that the Government must severely limit shipment size if it is to reduce mortality because a four-year data shows that although shipments can be as large as 4000 birds, mortality during air transport and quarantine is only significantly reduced in shipments involving less than 100 birds (ESPB et al., 1992).

An example of such a campaigner is the World Parrot Trust (WPT). The World Parrot Trust is a registered charity with thousands of members in over 50 countries. The World Parrot Trust was founded in 1989 at Paradise Park, Hayle, Cornwall, UK, (UK Registered Charity No. 800944). International expansion has been rapid and the Trust now has linked charities and support groups in Africa, Australia, Belgium, Canada, France, Germany, Holland, Italy, Scandinavia, Spain, Switzerland and the USA (WPT, ud). The WPT is campaigning to stop importation of wild caught birds into the European Union. The objective of the Trust is to promote the survival of all parrot species and the welfare of individual birds everywhere.

The WPT pursues these objectives by funding field conservation work, research projects and educational programmes. Its major activities include the following:

- Restore and protect populations of wild parrots and their native habitats
- Promote awareness of the threats to all parrots, captive and wild
- Oppose the trade in wild-caught parrots
- Educate the public on high standards for the care and breeding of parrots
- Encourage links between conservation and aviculture (WPT, ud).

Therefore, the Trust seeks to promote the concept of 'responsible aviculture' where the interests of the parrots themselves are given priority over commercial, political, career or other human concerns. The World Parrot Trust and its members wish to be recognized as the 'True Friends of the Parrots', and to win over the majority of aviculturists, pet owners and scientists to its point of view. The World Parrot Trust has been campaigning for individual shipments of parrots to be limited to 50. For

instance the World Parrot Trust is campaigning for a ban on the importation of wild-caught parrots into the European Union. By the year 2002, over 16,000 people from 83 countries had signed the petition (Low, 2002).

Although not globally threatened by IUCN criteria, the Trust believes the ruthless trapping and exporting of African grey parrots from West Africa will lead to the extirpation of this species throughout much of its range in the near future. Enforcing existing protected areas and eliminating unsustainable trade in this species are both desperately needed.

5. Conclusions and trends in the application of trade related instruments to the trade in NWFP

Local, national and international interests in both *Prunus africana* and the African grey parrots arise because they are export products that are demanded in increasing quantities to meet the needs of the international community. Conservation concerns, management refinements and putting in place control systems as well as systems for ex-situ production are all consequences of increasing commercialization of these two species. For example, in 1999, *Prunus africana* was worth some US\$ 700000 to Cameroon and US\$ 200 million to the international pharmaceutical companies in Europe and America (CARPE, 2001). With regards to the African grey parrots, if the annual quota of 12000 birds are captured and sold as pets in Europe, they can fetch up to six billion FCFA (US\$ 9.23 million) to the international dealers but would be worth some 96 million FCFA (US\$ 148000) to the Cameroonian government. In terms of revenue capture, the trade in these two species may fetch for the Cameroon government 0.35% and 1.6% of the international trade value for *Prunus africana* and the African grey parrots respectively. To the producing communities, these products may provide up to 70% to household revenues and in some village communities over 60% of the population are involved in production.

This trend holds true for many other NWFP of high commercial values exploited from Cameroon and other Africa countries.

The concern is whether one could safely say that the trade in NWFP from Cameroon follows the role of equity and fair play or just those of the 'larger and better resourced individuals and companies' exploiting the 'weaker ones'. No straightforward answers are available, perhaps because of the complexities that surround the NWFP themselves. Although the above statistics do not seem to portray an equitable trade transaction scenario, it must be cautioned that they are indicative and have not been subjected to robust income analysis, to which this paper stands to recommend. Another concern is on whether some trade-related instruments govern the trade in these highly commercialized NWFP, and if so how efficient are they in ensuring equity, sustainability and improved living conditions for the producing communities? Is it the right time to make these judgments or are conclusions made from present trends likely going to be hasty and misleading? Perhaps more time and resources are needed.

However, both national and international trade-related instruments influence the trade in *Prunus africana* and the African grey parrots in Cameroon. Previously, the major drive had been towards the conservation of the resources rather than ensuring greater local benefits and poverty alleviation at community levels. Nowadays, the wave is fast changing towards a balance consideration on resource conservation and the welfare of the resource custodians. This is showing up in terms of participatory resource management models, empowerment of local communities through community forests and benefit sharing mechanisms. These strategies are today commonly found in both national and

international strategies on NWFP management. New trends such as certification and ecolabelling are evolving with some potential to fill loopholes in some of the national and international regulations.

The global bandwagon is the implementation of ISO 9000 and 14000 families to guide best practices in business activities of any kind that leads to international trade in any product or service for high quality and environmental management standards. ISO 9000 has become an international reference for quality management requirements in business-to-business dealings, and ISO 14000 is enabling organizations to meet their environmental challenges, as they may desire to achieve and demonstrate accomplishment in environmental management. The option is for an independent third-party registration to an internationally recognized environmental management system (EMS) standard known as ISO 14001. Registration to this standard attests to an organization's commitment to comply with applicable national regulations, to assess the significant effects of its activities, and to develop or improve its EMS (ISO Brief, ud). Although traders are price-sensitive to the quality of NWFPs from Cameroon, the systematic compliance to ISO standards in relation to trade in NWFPs has not yet gained roots, consequently, no measurable impacts of the ISO standards on NWFPs stakeholders can be cited in Cameroon.

In the light of evolving trends, resource managers, governments, donors, conservation organizations and local communities must acknowledge as a guiding principle that fast and quick answers to the problems of NWFP trade and conservation are not easy to come by. Solutions have to be fashioned out following the rules of business establishments, where dispersed producers have to become organized for bulk raw material supplies to reduce transaction costs, with some protection of the weak and the ignorant, at least in the early stages. This requires investments in terms of time and money, and in terms of clearly defining the roles of the game where need arises. For example, the development of infrastructure such as accessible roads is of great importance for greater local benefits from the management of *Prunus Africana*.

An additional level of infrastructure is needed to coordinate collaboration between the different supplying countries and between the countries producing and marketing the finished products (Hall et al., 2000).

Sound information remains a major ingredient for sound policy formulation on the trade and conservation of NWFP, but in Cameroon there is paucity or dispersion of such information. In some cases, available information is widely dispersed and policy makers do not have access to them in forms that they can easily be assimilated. Therefore, some form of coordination and management of information on important NWFPs in Cameroon is necessary to ensure information sharing and the translation of technical results into simple forms that can be easily understood by policy-makers. In this vein, a national *Prunus africana* forum and a national African grey parrot forum, with mandates similar to those of the *Prunus africana* Working Group in Kenya may go a long way to closing information gaps.

Considering that national efforts and coordination may never suffice to control and manage a resource of international market value, a relevant international organization would be best placed to set up an international *Prunus africana* Accord or African grey parrot Accord to which stakeholder countries must subscribe. A major advantage of an international organization is that it can lobby for the expansion of consumer markets where it is restricted by unwarranted regulations. Such an organization should act on behalf of all these countries by taking forward an agreed collective position with regard to trade in products bought and sold, while respecting CITES provisions, as well as those of other MEAs and trade agreements. As a step towards such actions, the countries involved in the production and trade of specific NWFPs should adapt and adopt the same provisions for implementing the CITES, TRIPS, WTO, CBD and WPT regulations. For instance, the respect of

CITES quota and timely reporting on export and imports of CITES Appendix II species such as the African grey parrots and *Prunus africana* may go a long way to improve sustainable trade. The application of these instruments would however, depend on a sound analysis of trade volumes and stricter import and export controls and coordination in both the export and import countries. A specified national agency with required resources to perform its assigned tasks would seem a necessary step ahead.

Actions can be reinforced by specifying standard conditions such as management criteria and indicators for social, ecological and economic certification of production to ensure sustainable forest management. For instance, it would be consistent with the CITES status of *Prunus africana* if certification was issued for bark harvested in accordance with recommended policies and protocols. Just as higher rates have been paid in Cameroon for quality bark, a higher rate could be set as an incentive to suppliers for bark certified as originating from sustainably harvested populations (Hall et al., 2000).

Overall, it may suffice to say that many changes are happening, the level of awareness is increasing and many international efforts are being geared to assist developing countries in achieving their own industrial base. The NWFP sector can benefit greatly from such opportunities if African countries can fully use them and tap the benefits by developing local technologies, increasing quality standards of products and recognizing and retaining property rights to their products.

The strategy of completely banning the trade in a highly commercialized species such as the African grey parrots and *Prunus africana* may not produce encouraging results because of the possibilities of going around the law by corrupt individuals and officials whose livelihoods are highly dependent on such activities. For example, a national ban on the exploitation of *Prunus africana* in 1992 led to the exploitation of a higher tonnage than any preceding year, and a similar experience was observed in 1993 with CITES sanction on the import of African grey parrots from Cameroon, where the trapping rate was almost doubled. Therefore, it seems raising awareness on the impact of uncontrolled trade on resources at both the producer and consumer levels, and suggesting practical alternatives and control systems could go a long way than condemning a source of livelihoods for thousands of people, as are being done by some conservation and animal welfare organizations. This cannot be achieved in a vacuum, because certain norms and procedures must be obeyed as being practiced with other natural resources such as oil and minerals. In this light, the following select suggests a number of recommendations on trade-related instruments that can lead to the improvement of the conservation and livelihoods contributions of *Prunus africana* and the African grey parrots trade to stakeholders.

6. Policy recommendations/ proposed areas for further research

In Cameroon, NWFP of high commercial values such as *Prunus africana* and the African grey parrots are subjected to both national and international regulatory tools. The weaknesses embedded in the existing system of controls provide a quest for improvements at the local, national and international levels. Such improvements may be subjected to the recommendations that are listed in this section. Some of the recommendations are generic while some are specific to either to *Prunus africana* or the African grey parrots. Both *Prunus africana* and the African grey parrots are candidates earmarked under CITES Appendix II, implying that the respect for annual harvestable quotas forms the primary route to achieve the conservation and sustainable use of the species.

Generic Recommendations:

- Cameroon government authorities need to develop a coordinated and integrated permitting and information management system for the trade on *Prunus Africana* and the African grey parrots as well as other commercial NWFPs. Each permit holder should have a specified area from where to collect products indicated in his or her permit.
- There is need to harmonize information on NWFP produced in more than one country in Africa. This would require the creation of networks for *Prunus africana* and the African grey Parrots. The networks will assist in the development, execution, and evaluation of project proposals, and provide advice for government agencies and both local and international organizations (Snyder et al, 2000). For example, in order to increase the effectiveness of parrot conservation activities in Cameroon and Africa at large, there is need to build a network of interested individuals and organizations that will gather and distribute information in order to assist parrot conservation and transparency in trade.
- National baseline inventories must be conducted to establish reasonable exploitation quotas for both *Prunus africana* and the African grey parrots. In order to ensure sustainability, it is imperative that the competent authorities do an inventory of actual stock or refer to all available information on quantity of *Prunus africana* and yield estimates so that appropriate exploitation quotas are set.
- National and international policy frameworks are necessary to ensure that agreements between governments and international organizations and between companies and local communities are respected. For example, National *Prunus africana* Working Groups, or their equivalents in which government, industry and local communities participate, should develop strategies to review bark harvesting quotas and monitor compliance to harvesting standards across the country. This would be in alliance with certification (green-labelling) of bark from forests shown by monitoring to have been harvested strictly in accordance with the prevailing recommendations. At international level, there is currently insufficient coordination of effort between source countries or between these countries and the user industries in America, Australasia, Europe and the Far East. There is need for an International *Prunus africana* Accord involving all supplying countries and the industries receiving material for processing. To initiate the process and bring the Accord into operation, a relevant international body/organization such as the FAO or IPGRI should liaise with the parties concerned (Hall et al., 2000). The Accord should specify, in advance for five-year periods, balanced national harvest and supply quotas, to be met without contravening CITES regulations and should incorporate provision for certification.
- Independent third-party registration: The global bandwagon is the implementation of ISO 9000 and 14000 families to guide best practices in business activities of any kind that leads to international trade in any product or service for high quality and environmental management standards. There is need for an independent third-party registration to an internationally recognized environmental management system (EMS) standard known as ISO 14001. Registration to this standard attests to an organization's commitment to comply with applicable national regulations, to assess the significant effects of its activities, and to develop or improve its EMS (ISO Brief, ud).
- Some countries that are not yet signatories. to CITES but that do trade in significant numbers of wild-caught parrots and/or *Prunus africana* should be convinced to comply as a matter of urgency. However, considering that African Grey parrots and *Prunus africana* are both listed as CITES Appendix II species, one way to avoid the over-exploitation of resources from one country following more stringent measures in neighbouring countries, may be to establish a regional level export quota based on national quotas for Central Africa producing countries. For instance, the Eu raised concern on the increased level of the annual export quota of *Prunus africana* from DRC from 400 tons in 2003 to 1000 tons in 2004 (TRAFFIC, 2005).

- Increase and improve cooperation amongst enforcement agencies. Establish joint patrol agreements amongst countries that are sharing borders to fight illegal trade and smuggling of products from one country to another.
- The role of importing governments remains pivotal in controlling the exploitation and trade on both the African grey parrots and *Prunus africana*. For example, over 80% of all grey parrots exported from the Democratic Republic of Congo between 1995 and 2003 were destined for the EU (TRAFFIC, 2005). However, at the 31st meeting of EU scientific Review Group on 13 December 2004, the EU decision-making process regarding the implementation of CITES article IV (relating to “non-detriment findings”) raised concerns on the suspension of the imports of Grey parrots, which was later adopted as an action plan at CoP13 (TRAFFIC, 2005).

Recommendations more specific to *Prunus africana* trade

As the concerns that led to its CITES listing have made clear, *Prunus africana* has been very heavily exploited in parts of its range even threatening local extinction in some places. Active management is now required and appears to be gaining ground in some of the major producing countries. The challenge now is to create circumstances under which more value of the *Prunus africana* trade accrues locally and nationally within source countries. This will involve major thrusts towards sustainable harvesting of wild populations and planting of trees on-farm, facilitated by national and international structures (Hall et al., 2000). The following recommendations may help in shaping the right policy directions.

- Land tenure systems need to be strengthened. The regulations that govern the land tenure in areas where NWFP are exploited also influence their conservation and the beneficiaries thereof. The land tenure system in Cameroon provides for three legal categories of tenure: state property, private property, and national lands, which can be communal holdings, or open access. *Prunus africana* is found in forests falling within all of these categories. In open access areas and common property areas, conflict and confusion might continue since it is not clear who holds exploitation rights. One way in which the GoC can minimize this problem is by specifying exploitation areas as well as the quantity to be harvested in each exploitation area. The exploitation of *Prunus africana* in well demarcated community forests, respecting stated roles within management plans, as currently being done in Oku mountain region seems a step in the right direction that can be replicated in other areas.
- Expansion of markets: The market for *Prunus africana* extract is likely to be maintained and could increase significantly following clinical indications of non-toxicity and efficacy for treating benign prostate hyperplasia. There would be a much-increased market if products based on the extract were approved for prescription as medicines by the Federal Drug Administration (USA) and as dietary supplements and medicines in the UK. An appropriate international organization, acting on behalf of the parties to the International *Prunus africana* Accord, should lobby for the relevant approvals to be given; ensuring benefits are clearly directed towards the people of exporting countries.
- Improvement in in-country processing: Very little value is added to *Prunus africana* products by the limited processing carried out within Africa. The feasibility of more or all processing being routinely undertaken in source countries, with more economic benefit accruing to stakeholders there should be evaluated.
- Awareness raising on environmental impacts of wild unsustainable harvest: Dialogue with industries and awareness-raising on harvesting impacts, benefit-sharing issues and the changing legal and policy frameworks in which these activities take place, as specified under the Convention on Biological Diversity (CBD).

- Respect for CITES recommendations by both exporting and importing countries. This requires the CITES Scientific Authorities to contact importing countries and all companies selling herbal preparations based on *Prunus africana* to give them information on the impact of wild sourced bark, and the potential need for commercial cultivation in Africa as a sustained source of bark and revenue for the countries involved. CITES also recommended that the IUCN/SSC Medicinal Plant Specialist Group liaise with the European-American Phytotherapeutic Coalition (EAPC) to increase awareness about the conservation implications of bark exploitation from wild populations.

Recommendations more specific to trade in African grey parrots

Many efforts by individuals, governments, conservation and animal welfare organizations have been put in place to curb or bring sanity in the international trade of wild-caught birds including the African grey parrots. However, a key problem has been the lack of appropriate legislation, and the lack of enforcement of such legislation where it exists. Addressing this issue and those related to it will be necessary before African Grey parrots can be considered safe from being threatened with extinction. The generic recommendations alongside those that are listed hereunder should be considered while addressing policies that may govern the sustainable management of African grey parrot populations in Cameroon.

- Review of the contents of permits allocated to Licensees: There is need to indicate the names of assistants authorized to carry out activities in the field on the back of each license. The trappers are those who go to the forest to trap the parrots not the licensees, which means that each licensee should name the trappers with whom he is going to work and their names and national identification card numbers reflected in each license. This would exclude illegal trappers who may not understand the applicable laws and policies.
- Enforcement of national laws and regulations. National laws and regulations governing the trade in African grey parrots in Cameroon exist and need to be enforced. More stringent penalties need to be put on government officials found to be conniving with illegal trappers and smugglers. Proscribe the installation of any bird quarantines near a national park or an area under protection against this activity;
- Reexamining the potentials for eco-tourism instead of trapping for the pet trade especially inside the park. The forest clearings in Lobeke National Park and its environs seem to have the potential for eco-tourism development considering the massive flocks of parrots and other animal species present. This potential has not been assessed in economic terms. There is need to do so in order to estimate how much revenue can accrue from ecotourism compared to the present illegal trade in parrots. It seems a booming local eco-tourism industry involving the local communities would guarantee long-term support of these communities to conservation initiatives than the present pet trade that currently benefits only about 90-120 local people. General community benefits are lacking and the trade is disorganized and clandestine in nature.
- Long-term monitoring programme: Development of a long-term programme for monitoring of African grey parrot populations to assess the extent to which trapping may be impacting on wild populations. There will also be the need to specify and determine hunting/trapping seasons and locate and delimit the trapping areas to be allotted to each authorized trapper through a call to tender.
- Education campaigns to educate and inform parrot trappers and local communities adjoining the LNP on the present and potential value of the African grey parrots. Local participation in a collaborative approach in protection of birds and possibilities in development and management of a benefit-sharing scheme.

Future research areas for *Prunus africana*

- Assess the influence of local, national and international institutions in management and conservation of *Prunus africana* in Cameroon.
- Income analysis to give the structure of the financial benefits accrued to stakeholders along the trade chain, with special emphasis on the evaluation of the contribution of such incomes to poverty alleviation at the local level. This may answer the question of whether the sustainable production and trade of highly commercialized NWFP can bring local people out of poverty.
- Wider market survey, to estimate volumes of cultivated bark coming onto the market from existing plantings of *Prunus africana*, especially in the North West province where over 3500 farmers have already engaged in planting activities.

Future Research areas for African grey parrots

- Comparative economic analysis of the present and potential income contributions of African grey parrots to local livelihoods and poverty alleviation in the light of trapping for the pet trade and ecotourism. Income analysis to give the structure of benefits accrued to stakeholders along the pet trade chain for better policies that can ensure equitable benefit sharing.
- Biological studies on the reproductive ecology, estimate of total African grey parrot population within the LNP.
- A thorough study on imports from neighbouring countries and export volumes procedures as well as on the present liaison with the CITES Secretariat

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