

# IMPACT OF CERTIFICATION ON THE SUSTAINABLE USE OF NWFP<sup>1</sup>: LESSONS-LEARNT FROM THREE CASE STUDIES<sup>2</sup>

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## Abstract

Although the development of and debate on forest certification currently focuses on wood products, certification is also relevant to non-wood forest products (NWFP). While discussions on NWFP certification have increased recently, the applicability and impact of certification as a tool to promote the sustainable use of NWFP remains unclear and less debated. This paper aims at contributing to this discussion by analysing the status of certification of three well-known NWFP using case studies from their main exporting countries: brazil nuts (*Bertholletia excelsa*) in Bolivia, sheabutter (*Vitellaria paradoxa*) in Ghana and devil's claw (*Harpagophytum* spp.) in Namibia. For this purpose, the principle production systems and producers as well as the trade in and markets for the products have been investigated. In addition, the actual and potential use of forest management, organic, social and product quality certification have been analysed. All three case studies have shown that trade in certified NWFP is still marginal compared to the trade of non-certified products. Major challenges of NWFP certification include lack of market demand, high costs of certification system establishment and difficulties in establishing a monitoring system due to the dispersion of

collectors. However, the case studies also highlighted benefits of certification such as the provision of higher prices for producers and promotion of the establishment of a functioning monitoring system. Positive influences on tenure rights and local empowerment were identified as possible additional benefits of certification but the examples show that other factors might emerge as more significant side benefits from NWFP certification. The environmental impact of certification on the exploitation of NWFP depends very much on the nature of the resource used.

**Key Words:** Regional development, forest certification, non-wood forest products.

## Resumo

O artigo trata de três estudos de caso realizados na Bolívia, Gana e Namíbia relacionado com os processos de certificação de produtos não florestais.

**Palavras-chave:** desenvolvimento regional; certificação florestal; produtos florestais não-madeiros.

## 1. Introduction

The issue of forest certification is a highly discussed and disputed topic in the forestry sector. The discussion on certification emerged due to identification of the potential benefits that could be provided by this concept. These benefits might include: i) provision of binding and verifiable agreements between key actors; ii) strengthening or clarifying of user rights; iii) provision of value-addition and market premium prices for certified products; iv) empowerment of normally disadvantaged stakeholders, especially local communities; v) acting as a catalyst of social reform processes through stakeholder participation and consultation; vi) provision of market niches for specific products or services and vii) encouragement of the establishment of collaborative partnerships and/or global alian-

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ces between producers and consumers for the responsible use of forest resources (GTZ, 2002; KRUEDENER v., 2000; FAO, 2000). However, forest certification might also create disadvantages for producers and other stakeholders. These disadvantages include high financial and managerial costs and reduced short-term revenue due to lower output volumes (FAO, 2000).

Although the development of and debate on forest certification currently focuses on wood products, certification is also relevant to NWFP. While discussions on NWFP certification have increased recently, the applicability and impact of certification as a tool to promote the sustainable-environmentally friendly, economically viable and socially equitable - use of NWFP remains unclear and less debated (see e.g. FALLS BROOK CENTRE, undated; NTFP DEMONSTRATION PROJECT, undated; VIANA et al., 1996; MALLET, 1998; FSC NTFP WORKING GROUP, 1999; MALLET, 2000; MALLET & KARMANN, 2000; MAAS & ROS-TONEN, 2000; FOREST STEWARDSHIP COUNCIL UNITED STATES, 2001; PIERCE et al., 2002 and most recently the comprehensive study by GUILLEN et al., 2003).

This paper aims at contributing to this discussion by analysing the status of certification of three well-known NWFP using case studies from their main exporting countries: brazil nuts (*Bertholletia excelsa*) in Bolivia, sheabutter (*Vitellaria paradoxa*) in Ghana, and devil's claw (*Harpagophytum* spp.) in Namibia. For this purpose, the main production systems, producers and the trade in and markets for the products have been investigated.

## 2. Theory

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. Although different definitions and categories exist, the main types of certification schemes distinguish between first, second and third party certification as well as between system-based and performance-based certification (see annex).

Certification schemes relevant for the use of and trade in NWFP not only focus on forest management certification, but also include certification schemes mainly used in the agricultural sector such as social (fair and ethical trade) and organic certification. A fourth major certification system identified focuses on product quality.

*Forest management certification programmes* often focus on ecological aspects of resource management, both at the forest and species or product level (e.g. chain-of-custody certification). Many different programmes exist on international, regional and national levels (e.g. Forest Stewardship Council, FSC; Pan European Forest Certification Programme, PEFC), which focus almost exclusively on timber products and include NWFP only marginally.

*Social certification systems*, such as fair and ethical trade (e.g. Fair Trade Labelling Organization, FLO; Trans Fair, International Federation of Alternative Trade), assure that labour conditions are acceptable and benefits are equally shared among those involved in production and trade. These initiatives foster business partnerships and management supply chains, which include secure and fair commercial deals and support the provision of market information (KRUEDENER v., 2000).

*Organic agriculture* (e.g. International Federation of Organic Agricultural Movements, IFOAM, EU Regulation 2092/91) is a holistic production management system which promotes and enhances

agroecosystem health, including biodiversity, biological cycles, and soil biological activity..." (FAO/WHO, 1999a). Wild crafted and semi-domesticated NWFP can also be considered as organic and many NWFP such as pine nuts, mushrooms, herbs and honey are increasingly commercialized as organic food products.

*Product quality certification* (e.g. Good Manufacturing Practices, GMP; Good Laboratory Practices, GLP) aims at ensuring that defined production standards have been taken into consideration. These standards focus on the product itself as well as the way it is processed and manufactured. Product quality parameters include product identity, purity, efficiency and safety. These parameters are relevant for a wide range of internationally traded NWFP mainly used in the food and pharmaceutical industries.

Key opportunities and challenges with regards to NWFP certification have been documented by Walter & Vantomme (2003) and are presented in Table 1.

## 3. Methodology

The FAO NWFP Programme aims at analysing the relevance and applicability of certification in the field of NWFP as a means of i) increasing market opportunities and revenues for NWFP producers, and ii) encouraging sustainable management of the resources providing NWFP.

Relevant literature on NWFP certification has been reviewed and documented (Walter, 2002a; Walter 2002b; Walter & Vantomme, 2003; Walter et al., 2003). In addition to the literature review, case studies have been commissioned by FAO in order to assess the (potential) impact of certification on the sustainable use of NWFP. These case studies cover different product categories, geographical areas and certification schemes and compare the use of certified and uncertified products.

TABLE 1.  
NWFP certification: key requirements, opportunities and challenges

Requirements	Opportunities	Challenges	Issues requiring further clarification
1. Establishment of a limited and monitored permitting system	6. Establishment of monitoring system to ensure compliance according to given standards	12. Dispersion of collectors, who are often located in rural and isolated areas	17. Suitability of different certification programmes
2. Development of tenure rights	7. Traceability of products from the source to consumers (chain of custody)	13. Definition of sustainable harvesting levels difficult due to limited ecological knowledge	18. Collaboration opportunities among different certification programmes
3. Limitation of access to harvesting site in order to maintain sustainable harvesting level	8. Clarification of tenure (both, land and user) rights	14. Creation of user conflicts due to the limitation of access to harvesting sites and unclear land tenure/ownership, especially in open access or communal land areas;	19. Standard quality and complementarity;
4. Development of niche market for high quality products	9. Environmental friendly exploitation through sound exploitation techniques and limited access to harvesting sites	15. Unclear market potential for certified NWFP	20. Costs of certification procedures
5. Implementation of quality control measures	10. Improved income generation through higher market prices	16. Insufficient product definition and classification, since many NWFP are not included in international classification or standardization systems	21. Monetary and non-monetary benefits for stakeholders
	11. Value addition, since high quality products might have better access to markets and gain higher prices		22. Replicability and mainstreaming of certification and the impact on non-certified products

Source: Based on Walter & Vantomme (2003)

This paper summarizes the *preliminary* results of three case studies: brazil nuts exported from Bolivia for the food industry (FAO, 2003a); sheabutter exported from Ghana for the food and cosmetic industries (FAO, 2003b); and devil's claw exported from Namibia for pharmaceutical and non-pharmaceutical markets (FAO, 2003c; FAO, 2003d). It is mainly based on a secondary literature review and interviews with key stakeholders, which provided an overview on the use of the respective products and documented relevant standards and certification schemes.

## 4. Findings

### 4.1 Certification of brazil nuts (*Bertholletia excelsa*) in Bolivia

#### Product & Markets

Brazil nuts produced for the international food market are mainly sold as raw nuts and used for the preparation of teas and ice cream. The oil of brazil nuts is also used for cooking, in lamps, soaps and hair conditioners.

The mean annual production is estimated by FAOSTAT (2003) at 62 000 t (1997-2002). The main producing countries are Bolivia (48% of world production) and Brazil (43%) and the main consumer countries are the USA (36% of world

imports in 1997-2001) and the United Kingdom (UK, 18%). The mean annual export value is estimated at US\$66 million (1997-2001), which corresponds to 1% of the international nut trade (SEARCE, 1999).

#### Production & Producers

The brazil nut is the fruit of the *Bertholletia excelsa* tree, which is found in its natural and wild form in the Amazon forests of Bolivia, Brazil, Peru, Guyana, and Colombia.

The main stakeholders involved in brazil nut production in Bolivia are processors (*beneficiadoras*), concession holders (*barracas*), middlemen (*contratista*) and gatherers (*zafreiros*).

TABLE 2.  
Production of and trade in brazil nuts

		1997	1998	1999	2000	2001	2002
Production (t)	World	51 506	44 142	62 556	75 156	68 750	67 750
	Bolivia	23 000	15 400	30 000	36 000	36 000	36 000
	Brazil	22 786	23 111	26 856	33 431	27 000	26 000
Export (t)	World	28 550	30 724	28 301	44 341	35 577	
	Bolivia	9 834	9 950	11 406	13 805	13 334	
	Brazil	14 661	15 128	6 106	18 928	10 552	
Export (US\$1 000)	World	67 649	65 279	66 410	80 301	51 584	
	Bolivia	30 711	28 257	30 889	33 803	26 561	
	Brazil	26 075	21 181	11 095	27 686	11 149	
Import (t)	World	31 036	29 412	24 546	35 911	30 763	
	USA	11 251	9 595	8 643	13 833	11 792	
	UK	5 695	4 860	5 130	6 017	5 374	
Import (US\$1 000)	World	82 702	70 485	66 267	77 526	58 567	
	USA	28 179	21 883	22 061	29 159	20 595	
	UK	16 531	12 540	14 229	14 113	11 143	

Source: FAOSTAT (2003).

The centre of the Bolivian brazil nut industry is the northern city of Riberalta, where 20 *processing plants* in 2002 employed 2 500 *quebradoras* (workers responsible for cracking the brazil nuts), 4 000 helpers, 650 permanent manufacturing workers and 1 300 temporary workers.

Some 180 *concessions* have been issued to *barracas*; current trends show a process of vertical integration, in which concessions are being transferred to processing units.

The *harvest (zafra)* period coincides with the rainy season. In December more than 15 000 people go deep into the forest to collect brazil nuts and do not return until February or March. These harvesters are hired on behalf of the *barracas* by *contradista* through the so-called *habilito*, which is an informal contract system in which a *beneficiadora*, *barraquero* or contractor pays a sum of money in advance to their brazil nut collector (*zafrero*) for future production. From March to December the same labor force that participated in the collection moves to the processing plants where the *beneficiado* takes place.

### Status of Certification

Out of the 24 existing processing plants in Bolivia, only two sell organically certified nuts according to the European Regulation 2092/91 and the National Organic Programme (NOP) regulations and incorporating some aspects from the guides for the organic collection of Naturland and the FSC certification standards.

For one of the organic brazil nut exporters, the authorized area for the wild collection of brazil nuts is 350 000 ha. This area is composed of discontinuous Amazon forests separated by pastures, roads, urban centres and small agricultural areas and is located in the Department of Pando (Bolivian northern region). The certified company is authorized

TABLE 3  
Price for brazil nuts  
(US\$ per kg FOB)

Year	Conventional	Organic	Fair trade
2000	2.6	3.3	-
2001	1.9	2.6	2.8
2002	1.3 - 1.8	2.9 - 3.1	3

Source: N.R. Santalla, pers. comm. (2003); O. Chevez, pers. comm. (2003)

to collect the crop only in this area. Collection areas are controlled by certifiers such as ImoControl Latino America and Bolicert, who verify that there are no contamination risks, garbage containers, etc. in the collection area. This does not mean, however, that the area is designed for the *exclusive* use of one specific *beneficiadora*; other *beneficiadora/barracas* may also collect nuts in this area in order to trade them as conventional products.

Volumes and values of organically certified and exported brazil nuts are still low. Export values of organic brazil nuts reached on average 2.2% of total exports per year between 1993 and 2001 (Augsburger, 1996; FAOSTAT, 2003; N.R. Santalla, Bolivian Association of Organization of Ecological Producers (AOPEB), pers. comm., 2003; O. Chevez, Northwestern brazil Nuts Beneficiadores Association (ABAN), pers. comm., 2003). Production volumes of Bolivian organic brazil nuts reached 213 t in 2001 (0.6% of total production), of which parts were destined to the *fair trade market*. The price paid for fair trade brazil nuts is usually higher than world market prices as a means of enabling farmers to attain a favourable trading position (see Table 3). The main importers of organic brazil nuts are Rapunzel Naturkost (Germany), Community Foods (USA), Horizon Natuurvoeding (The Netherlands) and El Puente (Germany).

Following a consultation process that started at the beginning of 1998, the Bolivian Council for Voluntary Forestry Certification (CFV) elaborated the *Bolivian Standards for Brazil Nut Forestry Management Certification* (CFV, 2001). The promotion of this certification is based on the principles and procedures for the development of forestry certi-

fication standards from FSC. Until now, neither brazil nut collection nor processing have been certified according to the FSC standards, mainly due to legal issues related to land access.

*Quality standards* include the Codex Alimentarius (e.g. international codes for nut tree sanitation, hazard analysis control point system) and ISO 9002, which provide guidelines for the establishment of quality systems.

### Certification of brazil nuts in Bolivia – some lessons learnt

Certification of brazil nuts is still rudimentary. However, producers are becoming more interested in certification since FOB prices for certified brazil nuts are 15-35% higher compared to the price paid for non-certified products. In the case of one Bolivian exporter, a farmers' cooperative, the extra money received is shared among all members.

Brazil nuts are already derived from an environmentally friendly production system without any inorganic inputs. The main obstacles for brazil nut certification in Bolivia are the limited international demand for certified products and the country's unclear land tenure situation.

Since 1980, a general trend of rising brazil nut exports has been observed. This increase was accompanied by a reduction of international market prices, which has affected the revenues of the sector making it necessary to increase export volumes.

The conditions to access international markets are becoming more and more difficult because of the growing amount of mandatory and voluntary regulations that have to be followed by Bolivian brazil nut exporters. Bolivian regulations are based mainly on European standards as they are considered stricter than their North American counterparts and so fulfilment qualifies the product for both markets.

Even though a large amount of Bolivian brazil nuts leave the country as conventional, uncertified products, they still have to meet a series of specifications required by importers. These certificates only document measurements with regard to the aflatoxins level.

## 4.2 Certification of sheabutter (*Vitellaria paradoxa*) in Ghana

### Product & Markets

Shea products exported from Africa are mainly used in the food industry (margarines and confectionary). The most important commercial use is as one of only six plant species whose vegetable fat can be used in the production of cocoa butter equivalents (CBEs) for addition to chocolate products (Official Journal of the European Communities, 2000). Recently, as the beneficial properties of sheabutter have been realised, there has been a growing demand (estimated at 1 000-3 000 t per year) for utilization in cosmetic and pharmaceutical products.

Locally, sheabutter is used for a multitude of purposes, the most important being cooking the cheapest source of vegetable oil in semi-arid sub-Saharan West Africa (Abbiw, 1990; Lamien et al., 1996). Apart from the fat or oil extracted from the kernels, other benefits and products of *V. paradoxa* are also known (e.g. fruit pulp, caterpillars, wood, fuelwood).

Total annual production of sheanuts is estimated by FAOSTAT (2003) at approximately 640 000 t per year (1997-2002) although gross estimates are extremely variable due to inaccurate assessments of local markets and the fact that often only export figures are readily available (HALL et al., 1996). The main producing countries are Nigeria, Mali and Burkina Faso, and the main exporters are Ghana and Burkina Faso (see Table 4).

### Production & Producers

*Vitellaria paradoxa* occurs in the 'agroforestry parklands' of semi-arid Africa (PULLAN, 1974; RAISSON, 1988; BOFFA, 1999), defined by BONKOUNGOU et al. (1994) as

TABLE 4  
Production of and trade in sheabutter  
(1997 – 2002)

	1997	1998	1999	2000	2001	2002
Production (t)	World	636 694	631 965	632 333	647 500	647 500
	Nigeria	373 000	368 000	368 000	369 000	369 000
	Mali	85 000	85 000	85 000	85 000	85 000
	Burkina Faso	70 000	70 000	70 000	70 000	70 000
	Ghana	55 000	53 000	52 000	65 000	65 000
Export (t)	World	47 882	45 191	26 667	81 499	28 537
	Ghana	24 253	9 137	5 523	55 858	5 057
	Burkina Faso	7 633	20 663	7 930	11 575	5 374
Export (US\$1 000)	World	8 736	7 471	3 995	10 133	5 682
	Ghana	5 267	1 764	1 702	7 881	419
	Burkina Faso	847	2 691	537	534	1 100
Import (t)	World	5 769	12 850	24 893	6 649	37 925
	UK	2 401	20	0	0	26 394
	Sweden	2 554	9 966	0	6 097	10 470
Import (US\$1 000)	World	950	4 322	7 417	1 426	9 118
	UK	96	38	0	0	5 876
	Sweden	746	3 121	0	1 281	2 201

Source: FAOSTAT (2003).

“land-use systems in which woody perennials are deliberately preserved in association with crops and/or animals in a spatially dispersed arrangement and where there is both ecological and economic interaction between trees and other components of the system”.

The main selection stage of *V. paradoxa* occurs when fallow (rarely virgin woodland) is cleared. Most immature individuals are removed and only selected large trees are maintained on cultivated land. The selection criteria used for mature trees are based primarily on fruit productivity (as a function of age, health and size) and competitive effects with annual crops (determined by tree size, leaf density and spacing). New recruits for farmland shea populations are selected from regeneration by not cutting and then protecting from fire, during the cyclical clearing of fallow land (LOVETT and HAQ, 2000).

Sheanuts are collected by women and children early in the rainy season (April-August). Women have the main rights to harvest from land cultivated by their families but as the harvest progresses, longer distances must be covered as fruit near homesteads is quickly collected. Open access collection rights are granted in fallow or woodland areas though women usually prefer to harvest on cleared land claiming fewer risks from snakes or scorpions and that trees produce higher yields because fires occur before flowering (GRIGSBY & FORCE, 1993).

Most sheabutter sold on western markets is extracted and/or refined in developed countries although in the last few years locally processed sheabutter is also being used in cosmetics. These include the BodyShop, which buys approximately 100 t annually from Ghana (TAWIAH, 1994; A. JONES, pers. comm., 1996) and COVOL Uganda, which aims to add value at the source by assisting local farmers to produce an exportable grade of sheabutter

(MASTERS & PUGA, 1994). Recently there has been increased demand for crude, in-country extracted butter for export to, and refining in, Europe, with the aim of saving in waste, transport and labour costs. The demand for this type of sheabutter from Ghana was 6 000 t during the 2002/3 season although technical hitches have resulted in about half this target being met.

### Status of Certification

Although there have been a number of past and current attempts to export *organic* sheabutter, currently this industry is still in its infancy. There is, however, much interest in sourcing organic sheabutter for the manufacture of organic chocolates (five year supply contracts have been offered) and ‘natural’ personal care products.

It is often claimed that shea trees are ‘wild’ (since they are almost never traditionally planted) and could therefore be certified under ‘wild-crafting’ schemes such as the *Standards for Organic Farming & Production* of the Soil Association. The degree of management afforded to shea in the agroforestry parklands and the fact that shea trees are usually intercropped at some stage in their life, suggest that a suitable certification scheme would be either one already used for other ‘horticultural fruit’ production systems or one that is designed specifically for these indigenous parklands. Any organic certification for shea should also include at least an attempt to show where the next generation of trees will come from.

Given that most shea is already produced in a sustainable system with no inorganic inputs (since few subsistence farmers in the ‘shea zone’ can afford them), a key issue is the lack of a transparent chain-of-custody arrangement from harvest to final sheabutter and information on farm location, management methods, etc. for many hundreds or

thousands of illiterate small-scale rural producers.

There are few recorded examples of some hundreds of tonnes of strictly ‘fairly traded’ sheabutter since organizations such as the Fairtrade Labelling Organizations International (FLO) demand a high degree of transparency and documentation. A number of organizations have, however, developed their own internal standards for fair trade processing and purchase of their raw materials, such as the trade in sheabutter between women cooperatives in Northern Ghana and the BodyShop in the UK.

The fair trade market place has seen rapid growth in recent years due to consumer awareness and offers many opportunities for sheabutter processors. The benefit of fair trade is that only simple changes are needed for basic certification: formation of registered groups of women processors that receive a higher than local-market price for their product. More widely and internationally recognized forms of fair trade certification are also possible but require better record-keeping and working conditions. Existing examples of fair trade have relied on the ‘buyer’ to offer higher prices to certain groups that are then assisted by external ‘development’ agencies. If, in the future, more fair trade-linked organizations would offer advice and support to those groups, increased access to existing market opportunities could be provided to shea producers and other stakeholders.

One commonly cited constraint to improving the sheabutter market is the consistency of *quality*. Complaints are focused on butter colour, smell, texture, etc., and many tests are performed to check quality. Full laboratory analysis is often expensive and for a non-expert, this analysis can be bewildering. A more concise set of standards or a grading system, simple to perform without the need for expensive laboratories

or procedures, has therefore been called for.

Key beneficiaries of improved quality could be local producers as the value addition for quality would be directed to the source. Unfortunately, constraints in terms of lack of traceability, mechanisms to ensure product quality and customer confidence often hinder the application of product quality standards.

Due to the nature of the agroforestry parkland system - indigenous 'wild' trees inter-cropped with annual crops in a managed farming cycle - sheabutter is not truly a product of a wild 'forest/woodland' system and therefore does not easily fit under *forest certification programmes*.

### Certification of sheabutter in Ghana – some lessons learnt

Although the quantities of certified sheabutter currently available are limited, demand is estimated to be in the range of thousands of tonnes, making this potential market an extremely attractive proposition if current constraints can be overcome. The two main constraints responsible for the low volume of certified sheabutter are market demand and traceability.

Firstly, the obvious market for a certified product (with premium price potential) is the *personal care and cosmetic market*, which is still a small portion of the total trade of sheabutter. An even smaller portion of this market is actually sourced locally as opposed to that from 'refined' sheabutter from the trade in western processed sheanuts. Since traditional sheabutter can easily be obtained at low prices in village markets there has been little incentive to attempt certification, particularly if these 'new' businesses have other costs when entering the marketplace.

The second and possibly most important reason is that *traceability* is crucial for certification. Given the vast land area and number of small-

holders necessary to produce a realistic tonnage of sheabutter for export, the logistics and costs involved are tremendous. It is therefore only possible with 'developmental' support, either from the private sector or non-governmental organizations.

Although only rudimentary information exists, it would seem that the resource poor women in the semi-arid lowlands of Ghana (and across the rest of the African shea zone) would be able to *benefit* economically from the application of certification systems if these two obstacles could be overcome. There is also a huge opportunity for entrepreneurs with the requisite capital, and willingness to take risks, to link with women processors and increase/share in these benefits. In the case of fair trade, the rules of this certification system will also dictate that a good proportion of the benefits are received by the women. It is uncertain, however, how large the market place is for 'fair traded' sheabutter and how necessary links with other certification systems will be to ensure a premium price (organic or quality).

The biggest hurdles for organic certification are the start-up costs and time required to ensure 'proof'. In the absence of grants to support this, it is likely that economically empowered individuals/companies will be required as partners. The question therefore arises as to how benefits will be shared with the less empowered stakeholders. Certification of locally-produced high-quality sheabutter (by simple low-cost methods) offers some of highest potential for increasing the benefits to the rural poor because it will circumvent the need for, and price control by, overseas refining (LOVETT, 2003).

Following examples in Uganda, it is predicted that impact on the environment will be positive if

value is added at source and the cause of these increased benefits are clearly highlighted in the community. It is clear that demand for sheabutter is on the increase but, in the absence of mechanisms to encourage improved management, it is produced from a resource which is heavily under threat from an increasing population and alternative land uses.

### 4.3 Certification of devil's claw (*Harpagophytum spp.*) in Namibia

#### Product & Markets

The African devil's claw (*Harpagophytum spp.*) is a medicinal plant, which is both used in traditional medicine and traded on the international market. In the main consumer countries (USA and EU countries), devil's claw is chiefly used for its effects to treat articular ailments such as osteo-arthritis and rheumatism (CHRUBASIK & SHVARTZMAN 1999; DEUTSCHE APOTHEKERZEITUNG, 2001; CHRUBASIK & EISENBERG, 1999). In 2001, total trade reached 700 t, 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).

TABLE 5  
Export\* and production\*\* of devil's claw  
(t)

Country	1997	1998	1999	2000	2001
Namibia*	251	613	604	380	637
Botswana*	5.5	0.5	2	-	33
South Africa**	-	-	6.9	1.3	21

Source: CITES (2002)

## Production & Producers

Devil's claw is found in most Southern African countries in the sandy Kalahari areas. *H. procumbens* is mainly found in Namibia but also occurs in Botswana, Zimbabwe and South Africa. *H. zeyheri* occurs in the above countries as well as in Angola, Zambia and Mozambique (COLE & DU PLESSIS, 2001). *H. procumbens* is preferred on the market, because it is said to have a higher concentration of active ingredients. These ingredients are mainly found, in both species, in the secondary roots (storage tubers), which are used exclusively as raw material for producing devil's claw products.

Concern regarding the sustainability of devil's claw sourcing was highlighted at the international level when, at the eleventh Conference of the Parties of the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) in 2000, Germany proposed that both species, *H. procumbens* and *H. zeyheri*, be listed on Appendix II. Namibia and other Southern African range states did not support the listing and the proposal was withdrawn largely on the basis of a lack of scientific data available to support the listing of *Harpagophytum* spp. However, certain decisions were made to facilitate continued monitoring of the trade in devil's claw.

Sustainable wild collection can be achieved if only some of the secondary tubers are removed, the taproot is not disturbed and the hole that had to be dug in the ground to get at the roots is refilled after the removal of tubers (COLE & DU PLESSIS, 2001). Although commercial cultivation of devil's claw is receiving attention, these efforts face considerable obstacles such as the plant's low germination rate, disease control and economic viability (see e.g. DE JONG, 1985; cited in KUMBA et al., 2002). Production of cultivated devil's claw for 2002 was estimated at between four to six

tonnes (COLE, 2002) and 40–50 t (FAO, 2003d).

In terms of supply, four main groups of stakeholders in Namibia can be distinguished: harvesters, middlemen, exporters and importers (COLE, 2002).

*Harvesters* are drawn from the very poorest sections of society, who earn a minimal living under the most marginal of agricultural and socio-economic conditions. It is estimated that between 5 000 and 10 000 harvesters in Namibia rely on the harvesting and sale of devil's claw to generate cash income. For many harvesters, the sourcing of devil's claw from the wild is the prime or even only source of income.

It is estimated that between 50 and 100 *middlemen* link individual and group harvesters with exporters.

For the period 1995 to 2002 there were 17 Namibian *exporters*, each having exported at least two tonnes of dried devil's claw in total (and many others, exporting very small quantities). For this same period, nine exporters exported 100 tonnes or more. In general, exporters have additional sources of income and the contribution from the export of devil's claw to their incomes is relatively small (between 2.5% and 25%).

Between 60%-80% of all devil's claw supplied by Namibian exporters went to *international buyers* that clean, grade, pre-process (grinding) and repack it. Only 12% of the exports went directly to extractors/manufacturers (excluding the unknown percentage that a major buyer may have extracted/manufactured itself). During the period 1996 to November 2002 one buyer accounted for 25% of all Namibian supplies (LOMBARD, 2002).

## Status of Certification

*Organic certification* of devil's claw that has been collected from the wild has been documented for two projects. In South Africa, approx-

imately 10 t are collected per year on about 10 000 ha of farmland for the German market and certified by ECOCERT (HANNIG, MARTIN BAUER GMBH, pers. comm.; ORDOWSKI, ECOCERT International, pers. comm). In Namibia, the Sustainably Harvested Devil's Claw (SHDC) Project provides between 1.6 t (2002) and 10.2 t (1999) per year collected in an area of 307 415 ha and certified by the Soil Association. The price paid for organically certified devil's claw corresponds to 150% of the price paid for non-organic material (export data provided by the Ministry of Environment and Tourism (MET) and SHDC). The entire quantity of organically certified devil's claw supplied by the harvesters of the SHDC project was sold to a company that was not producing an 'organically certified' or an equivalent product, despite a higher price having been paid for the material.

Other German companies also obtain their material from sustainable 'organic' production using internal, company specific standards that may be no less strict than standards required for certification. These companies do not use third party certification systems for financial reasons (FRANKE, SALUS-HAUS, pers. comm.).

A variety of possible *product quality* certification schemes are of potential interest to companies trading in botanicals and producing herbal medicine such as devil's claw products.

Management certification according to ISO 9000 is of minor importance to the companies, because German law already requires an equivalent for pharmaceutical companies and the ISO 9000 certification of companies in the source countries is of no obvious relevance for marketing issues or legal requirements.

Certification schemes relating to product quality such as 'good practices' seem to become increasingly



Table 6.  
Quantities of organic and non-organic production  
of devil's claw in Namibia

YEAR	Organic material		Non-organic material	
	Production (t)	Sale price (US\$/kg)	Production (t)	Sale price (US\$/kg)
1999	10	3.7	577	2.3
2000	7	3.8	177	2.2
2001	4	2.9	640	2.0
2002	2	4.2	385	3.2
Total	23		1 780	

Note: The above prices are prices paid to exporters by buyers (FOB). The prices for organic material are based on SHDC data. The prices for non-organic material are based on information obtained from exporters as part of the National Devil's Claw Situation Analysis (in press) and reflect an average price only. The exchange rate used is based on the average US\$ / Namibian dollar exchange rate for that particular year.

Source: MET and SHDC export data

important, especially those relating to the sourcing of raw material such as 'Good Agricultural Practices' (GAP) or 'Good Wild Collection Practices' (various abbreviations). In recent years, China, Japan, and the European Union have developed such guidelines and the World Health Organization (WHO) is about to develop a similar document. Product quality is the main criterion for the pharmaceutical companies. Regulations on this issue have become stricter in recent years and companies have been forced to adapt.

Ecological and social aspects of sustainability are typically still poorly addressed by product quality certification guidelines; however, most stakeholders involved in medicinal plants sourcing, trade and production have increasingly become aware that ecological and social aspects of sourcing and trade are relevant parameters for product quality.

*Social certification systems* such as fair trade initiatives have not yet been widely recognized by consumers of species used for medicinal purposes. However, especially with products such as the African devil's claw, the potential for such certification systems seems to be relatively high. Fair trade certification initiatives related to *Harpagophytum* were already carried out by Ham-

blenden Herbs and were found to provide higher prices (12 times higher compared to conventional products) paid to individual harvesters and community controlled funds by creating direct links between harvesters and international buyers (Leith, undated). Despite these positive results, in general, social certification is still in less demand than organic certification.

#### Certification of devil's claw in Namibia – some lessons learnt

The presently lower volumes of supply of organically certified devil's claw can be attributed to:

- Lack of demand for certified material from buyers, manufacturers and end users;
- Reluctance on the part of buyers to pay higher prices for certified material;
- Logistical, institutional and resource management difficulties at various levels related to meeting certification standards;
- High costs of certification caused by the current market price and the supply of larger volumes of less expensive non-certified material;
- Difficulties in establishing an effective monitoring system;
- Insufficient availability of data on the size and distribution of *Harpagophytum* populations and ecology;

- Prohibition to advertise organic certification directly on product labels in Germany according to the German Law on Advertising Drugs; and
- Greater concern of buyers with the level of active ingredients as opposed to other issues such as sustainability.

Good practice guidelines could easily be linked to organic and social certification systems and could promote a participatory structure of these systems in which the companies themselves take over the responsibility for the monitoring and documentation of raw material sourcing. The real potential of these guidelines largely depends on the companies, while the influence of the consumer and even of authorities is rather limited.

During the last two years, the market for devil's claw has expanded; in addition to pharmacies, also drugstores and supermarkets have started to offer various devil's claw products that are sold as 'traditional pharmaceuticals'. This could result in an increase in sales figures because large wholesalers sell almost exclusively goods produced in mass production. However, these wholesalers, and consequently also the producers supplying the wholesalers, usually calculate with extremely tight margins. Therefore, this growing market would probably not promote the use of certified material.

#### 4.4 Lessons-learnt

The discussion of the case studies has shown that traceability, tenure rights, rural livelihood/empowerment, market potential, costs, harvesting and mainstreaming are among the key issues with regard to NWFP certification. A summary of the preliminary lessons learnt from the three case studies with regard to these key issues is documented in Table 7.

TABLE 7  
Preliminary lessons learnt from case studie

Selected key issues and questions	Preliminary lessons learnt from case studies		
	Bolivia Organic certification of brazil nuts	Ghana Fair trade certification of sheabutter	Namibia Organic certification of devil's claw
Traceability: Does certification provide opportunities to trace products from the source to the consumer by a functioning monitoring system?	YES Traceability and monitoring of sourcing and trade are among the crucial prerequisites for certification. They are considered as key limitations for NWFP certification.		
Tenure rights: Does certification contribute to the clarification of tenure rights?	NO Tenure rights are a major issue in Bolivia.  Forestry certification is not working because tenure rights are often not clearly stated.	YES Very likely since it links ownership of a higher value product to a proven source location.  Due to existing traditional use, usufruct rights are already quite strong.	? Not necessarily in its own right but certification can contribute to improved resource management.  However, this also depends significantly on general land rights and access not only pertaining to resource tenure.
Empowerment: Does the certification process empower normally disadvantaged stakeholders?	? Currently unknown, research on-going.	? This depends on who has control of the equity, i.e. who bears the cost of certification and how the benefits of premium prices are shared.  Possibility of one individual or company taking advantage and control of the situation.	? Not necessarily in its own right but organic certification standards do require certain organizational mechanisms that can contribute to empowerment.  Good management or good project implementation as well as strong support by consumers, the industry and political authorities would also facilitate empowerment of participants at all levels of production.
Rural Livelihood: Does the certification process improve livelihoods and / or reduce poverty?	YES An example is one of the Bolivian organic exporters, a farmer's cooperative. All the extra money received for the organic brazil nuts exported is shared among all members in equal parts.	? Very likely, since a high demand exists, which goes hand-in-hand with premium prices. The key issue will be: Will certification be able to 'sustainably' cover the start-up costs or will there be need for 'seed-money'?	? Certification has the potential to reduce poverty and improve livelihoods for some - but almost certainly not for all - harvesters, if consumers and companies can be motivated to pay higher prices for the products. Otherwise, certification may also endanger rural livelihoods and provoke a shift to cultivation, which will most likely happen in more accessible regions.

TABLE 7  
Preliminary lessons learnt from case studie

(Conclusion)

Selected key issues and questions	Preliminary lessons learnt from case studies		
	Bolivia Organic certification of brazil nuts	Ghana Fair trade certification of sheabutter	Namibia Organic certification of devil's claw
Market potential: Do markets exist for certified NWFP with a higher premium price?	? Although the certified product has a higher price, it is not easy to export higher quantities because this is a niche market for few exporters (three organic exporters have halted their certification process).	YES Many enquiries exist from international companies from North America and Europe.	? There seems to be a certain market for certified organic products (e.g. in Germany), however estimates about its future potential are contradictory.  It is likely that the market for certified products with higher prices will not increase considerably.
Costs: Are high costs related to the certification process the main reason for reluctance of stakeholders concerned?	NO Costs do not constitute a major issue for producers. The problem is, in fact, the low demand for certified products, which favours the importer's interest in non-certified conventional products.	NO It is apparent that traceability and proof of organic source location are currently the major constraints.	YES In general, the industry is not willing to pay much higher costs, because they cannot be readily compensated by an increase in sales price.  Reluctance is not only based on costs but also on a lack of commitment to sustainable production and benefit sharing mechanisms.  The cost/benefit ratio to local rural producers is also a limiting factor in the decision to certify.
Harvesting: Does certification promote sound exploitation and harvesting techniques?	NO The brazil nut, either conventional or organic, is collected directly from the wild Amazonian forest in an environmentally friendly way.	NO Studies show that harvesting - certified or not-certified - makes little difference to stocking levels.	YES It promotes such techniques although it cannot guarantee them.  However, other mechanisms such as company rules and guidelines could be as effective.
Mainstreaming: Does certification have a positive impact on the production of and trade in non-certified products?	YES The volumes of exportation of organic products will directly affect the trade of the non-certified ones through: i) increased market access ii) higher prices iii) empowerment of normally disadvantage stakeholders	? Currently unknown, research on-going.	YES To some extent it provides a model for sustainable utilization and the production of high quality products.  However, in times when consumer consciousness is high, this effect will be higher. In times when cost-consciousness predominates, as it seems to at present, the effect will be less marked.

## 5. Conclusions

All three case studies have shown that trade in certified NWFP is still marginal compared to non-certified products. Major challenges of NWFP certification include i) lack of market demand; ii) difficulties in establishing a monitoring system due to the dispersion of collectors and, in the case of devil's claw, iii) high costs for the establishment of a certification system.

On the other hand, it was shown that certification of NWFP provides, in general, higher prices for producers (although these products are not necessarily commercialized as certified products) and promotes the establishment of a functioning monitoring system. Positive influences on tenure rights and local empowerment were identified but the examples show that other factors might have more influence on these issues.

The environmental impact of certification on the exploitation of NWFP depends very much on the kind of resource used. As many NWFP such as sheabutter and brazil nuts are already exploited in a sustainable way, the ecological impact of certification is negligible. However, other cases of destructively exploited resources providing NWFP are known (e.g. devil's claw). For these resources, certification might promote the environmental friendly collection of these resources.

Although difficult to assess, it is estimated that certification has a positive impact on the production of and trade in conventional, uncertified products by providing a model for the sustainable use of NWFP. However, this influence is obviously limited due to the variety of factors influencing the production of and trade in NWFP.

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## Annex

Table 8. Basic principles of certification systems

Certification principles	Definition	Examples
First party verification	Internal assessment of production systems and practices.	Sustainable Forestry Initiative (SFI), business ethics standards, company standards, (e.g. Weleda, Wala), codes of practice, codes of conduct (e.g. the Body Shop)
Second party verification	Assessment of a second party (e.g. customer or trade associations), who assess the company according to contractual obligations.	EU Regulation 2092/91
Third party verification	Independent assessment of a separate accredited third party.	Forest Stewardship Council (FSC), International Federation of Organic Agriculture Movements (IFOAM)
Standards	"Documented agreements containing technical specifications or other precise criteria to be used consistently as rules, guidelines or definitions of characteristics, to ensure that materials, products, processes and services are fit for their purposes." (ISO, 1996).	Standards by various accreditation and certification bodies.
System-based standards	Focus on the <i>process</i> and evaluate whether specific systems are in place which allow organizations and/or producers to achieve their (performance) objectives.	Environmental management systems ISO 14001/14004, Social Accountability 8000, SFI <sup>1</sup> , Pan European Forest Certification Scheme (PEFC) <sup>12</sup> , Canadian Standards Association (CSA) <sup>1</sup>
Performance-based standards	Focus on the <i>outcome</i> , the quality of goods and/or services, which should be in accordance with defined standards.	FSC, Rainforest Alliance/SmartWood, IMAFLORA, CFV, ERA, WWFMedPO

Source: Dankers (2002); Blowfield (undated); Maas and Ros-Tonen (2000); Carey (2000), Temple-Inland Forest (undated); Sierra Club (undated); Costa & Ibanez (2000); Fern (2001)

<sup>1</sup> SFI, PEFC and CSA are mainly system-based certification schemes, which include some performance-based standards (Fern, 2001).

<sup>2</sup> PEFC is mainly based on the Pan-European forest process on criteria and indicators for sustainable forest management (Fern, 2001). Major inter-governmental processes or initiatives on criteria and indicators for sustainable forest management, covering some 150 countries, are documented by FAO (2001).

Source: Walter et al. (2003)