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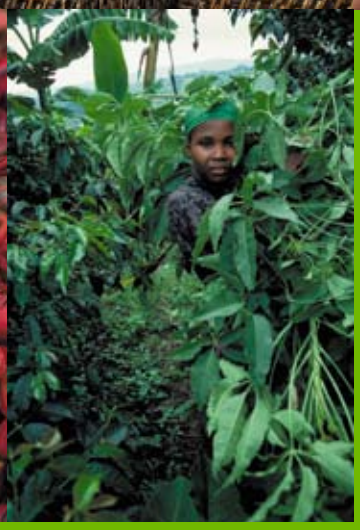

Non-Timber Forest Products between poverty alleviation and market forces

Edited by Jean-Laurent Pfund and Patrick Robinson

Initiated by:
Working Group “Trees and Forests in Development Cooperation”.

Members: Laurence von Schulthess (until mid 2005) and Ueli Mauderli (from mid 2005), SDC; Daniel Birchmeier, seco; Jean-Pierre Sorg, ETH Zürich; Christian Küchli and Sandra Limacher (from mid 2005), SAEFL; Ruedi Felber, NADEL; Jürgen Blaser and Jean-Laurent Pfund, Intercooperation; Peter Schmidt, Helvetas.

This permanent working group of forestry and development professionals comprises members of SDC, the Swiss Agency for the Environment (SAEFL), the State Secretariat for Economic Affairs (seco), the Swiss Federal Institute of Technology Zürich (ETH Zürich), the Postgraduate Course for Developing Countries (NADEL), Intercooperation and Helvetas. It disseminates information on the important contribution which trees and forests can make to sustainable rural development and focuses on the synergies between diversified sustainable forest management and poverty alleviation.

Previous publications initiated by the working group are:
– Dürr C., 2002: The contribution of Forests and Trees to Poverty Alleviation. IC Series no 3. Intercooperation, Bern.
– Brüschweiler S., Höggel U. & Kläy A., 2004. Forests and Water: Managing Interrelations. Development and Environment Report No 19. Geographica Bernensia and CDE (Centre for Development and Environment).

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This paper is based on a workshop held on January 31st 2005 in Bern. The title of the workshop was: Between market forces and poverty alleviation: The contribution of Non-Timber Forest Products. The objective was to clarify the potential role of Non-Timber Forest Products (NTFPs) in poverty reduction strategies.

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Front cover: above from left to right: Brian Belcher, Brian Belcher, Christian Küchli; below: Christian Küchli.
Back cover: above: Brian Belcher; below: Christian Küchli.

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List of contributors

Conrad, Heini
Intercooperation, Maulbeerstr. 10,
3001 Bern, Switzerland
Phone: +41 31 385 10 10
Email: hconrad@intercooperation.ch

Diarra, Mamadou Moustapha
Délégation Intercooperation au Sahel (D-IC Sahel),
Korofina Sud – Rue 96X747 – BP: 2386, Bamako, Mali
Phone: +223 224 44 60
Email: icsahel@icsahel.org

Felber, Hans Rudolf
NADEL/ETHZ – Postgraduate studies on development countries, ETH Zentrum, 8092 Zürich, Switzerland
Phone: +41 44 632 50 97
Email: felber@nadel.ethz.ch

Kouduahou, Fogué
CEAS-Burkina, BP 3306, Ouagadougou 01,
Burkina Faso
Phone: +226 50 37 34 11
Email: ceasdat@fasonet.bf

Michon Geneviève
IRD Montpellier, BP 64501,
34394 Montpellier cedex 5, France
Phone: +33 4 67 63 69 82
Email: Genevieve.Michon@mpl.ird.fr

Ndoye, Ousseynou
Center for International Forestry Research (CIFOR)
c/o International Institute of Tropical Agriculture/
Humid Forest Ecoregional Center, BP 2008 (Messa),
Yaounde, Cameroon
Phone: +237 223 74 34/223 75 22
Email: o.ndoye@cgiar.org

Ouattara, Amidou
CEAS-Burkina, BP 3306, Ouagadougou 01,
Burkina Faso
Phone: +226 50 34 30 08
Email: ceas-rb@fasonet.bf

Pfund, Jean-Laurent
Intercooperation, Maulbeerstr. 10,
3001 Bern, Switzerland
Phone: +41 31 385 10 10
Email: jpfund@intercooperation.ch

Picard, François
Délégation Intercooperation au Sahel (D-IC Sahel),
Korofina Sud – Rue 96X747 – BP: 2386, Bamako, Mali
Phone: +223 224 44 60
Email: icsahel@icsahel.org

Reiner, Susann
Regenwald-Institut e.V., Postfach 1742,
79017 Freiburg, Germany
Phone: +49 761 556 13 19
Email: reiner@regenwald-institut.de

Robinson, Patrick
CP 90, 2009 Neuchâtel, Switzerland
Phone: +41 32 753 69 30
Email: pat.robinson@bluewin.ch

Ruiz Pérez, Manuel
Dpt. Ecologia – Facultad Ciencias,
Universidad Autonoma de Madrid,
28049 Madrid, Spain
Phone: +34 91 497 80 00
Email: manuel.ruiz@uam.es

Schmidt, Kaspar
Groupe de foresterie pour le développement, ETH Zurich, and International and Rural Development Department, University of Reading, UK,
c/o ETH Zentrum, 8092 Zürich, Switzerland
Phone: +41 44 632 32 03
Email: kaspar.schmidt@env.ethz.ch

Sow, Djénéba Cissé
Délégation Intercooperation au Sahel (D-IC Sahel),
Korofina Sud – Rue 96X747 – BP: 2386, Bamako, Mali
Phone: +223 224 44 60
Email: icsahel@icsahel.org

Tendon, Jean-Marc
Centre Ecologique Albert Schweitzer – CEAS Suisse,
2, rue de la Côte, 2000 Neuchâtel, Switzerland
Phone: +41 32 725 08 36
Email: jm.tendon@ceas.ch

Foreword

The working group “Trees and Forests in Development Cooperation” is happy to present once more the results of its activities to the interested reader and hopes that this publication will be favourably received.

All over the globe, Non-Timber Forest Products (NTFPs) are an important aspect of forest management. While the debate in countries in the North revolves primarily around *services* (protection, biodiversity, recreation) and less around products, the situation is different in countries in the South and East. There, *products* often play an important role for local communities, either for home consumption or through commercialisation in local or regional markets.

Of course, questions regarding NTFPs can be discussed in different ways. The topic of the workshop, in which the publication has its origin, was deliberately placed at an economic and social level, in an attempt to grasp the contribution of NTFPs to poverty alleviation. We believe that a modern approach to management of forest landscapes, especially in countries in the South and East, has first of all to consider the products and the services offered by forests for the fulfilment of the needs of the local population. It was therefore logical to relate NTFPs to poverty reduction and to endeavour to review this theme.

We hope that this publication achieves its goal of building awareness, in the framework of development, on the problems related to the use and development of NTFPs, with determination but without excessive optimism.

This is the opportunity to warmly thank all those who contributed to the smooth running of the workshop and to the preparation of this publication. This includes, in the first place, the speakers and authors of the contributions, but also all those without whom such an endeavour could not have been realised. Our group AGWB would like to express its gratitude particularly to SDC and seco for their financial support and to Jean-Laurent Pfund, Intercooperation, the true craftsman of the workshop and the publication.

Zurich, 28th of November 2005
Jean-Pierre Sorg

1 A Workshop on Non-Timber Forest Products: Introduction

By Patrick Robinson & Jean-Laurent Pfund

This publication is the result of a one-day workshop in Bern to assess the state of knowledge on the contribution of NTFPs (Non-Timber Forest Products) to socio-economic development, and particularly their potential for rural poverty reduction, as well as the possible synergies between their sustainable management and overall forest and biodiversity conservation. It is only with a thorough understanding of the various factors at play at different levels of NTFP management and trade, that Overseas Development Aid can design intervention strategies which can improve NTFPs' contribution to poverty reduction in a sustainable way. The workshop programme is detailed in Annexe 1 and the list of participants in Annexe 2.

1. NTFP use and trade – an ancient tradition

NTFPs (see definition in Box 1) have been used for home consumption, processed, commercialised and traded across continents for millennia. Perhaps the oldest and best plant product examples are frankincense (or olibamum) and myrrh, precious aromatic resins from *Boswellia carteri* trees and *Commiphora myrrha* shrubs respectively, which were already traded from Arabia to Western Europe and India 4'000 years ago (Dharmananda 2003). Through careful stepwise control of the trade chain, local traders became extremely rich. Most NTFPs have continued to be collected from the wild, but some, such as rubber (from *Hevea brasiliensis*), have been produced from industrial plantations outside their continent of origin.

Amongst the traded animal products, examples are large numbers of live lions (from North Africa) and even tigers (from India) for the arenas of ancient Rome, and musk from the several musk deer species of central

The diversity of NTFPs is huge and corresponds to several different types of management. Harvesting the sap of Hevea brasiliensis is a well-known example of Non-Timber Forest "Production" (Photo by Manuel Ruiz Pérez).

BOX 1: "Definition" of NTFPs

Since the NTFP concept is defined not by what it is, but by what it is not, the debate has raged over its definition since the term was coined in 1989 (Belcher 2003, Neumann & Hirsch 2000). It evolved from the term "Minor Forest Products" precisely because this dismissive epithet does not reflect their economic, social, religious or conservation importance. It is believed by many that the term Non-Wood Forest Products, proposed and used by FAO, is not inclusive enough of what is important in NTFPs (e.g. the inclusion of charcoal, fuelwood, tools, carvings, i.e. products extracted using simple technologies by people living in or near the forests). **NTFPs are non-timber goods that are tangible and physical objects of biological origin** (minerals, services and forest benefits are excluded)(Belcher *op. cit.*). The important elements of the debate over the NTFP concept depend on the interests and priorities of the proponents, and are usually centred on the expected contribution of NTFPs to conservation as well as on their current and potential benefits to the poor *versus* their further impoverishment. The elements are:

- **The nature of the product** – inclusion/exclusion of non-industrial timber, other wood products.
- **The source of the product** – inclusion/exclusion of forest/tree plantations, managed forest, grassland, managed agroforestry systems within agricultural land.
- **The nature of production of the product** – gathered only from the wild, or also including those that are domesticated (e.g. rubber, cocoa, oil palm and other industrial tree plantation crops are typically excluded from NTFPs); but the distinction is blurred and unhelpful since many products originate from both wild and domesticated or semi domesticated production systems.
- **The scale of production** – capital intensive, industrial scale *versus* small scale mixed systems;
- **The ownership and distribution of benefits** – on the basis that in many countries, rural people have access rights to NTFPs but not to timber; however often the poor do not have access rights to the more valuable NTFPs (for further details, see Belcher *op. cit.*).

Asian and Himalayan alpine shrub/forests, which has been used in perfumes and traditional medicine of east Asia for over 5000 years (Pickrell 2004). Musk is currently used, apart from perfumes, in as many as 400 Chinese and Korean traditional remedies, and can fetch gram for gram three times more than its weight in gold.

For over a century, the most frequently used term was Minor Forest Products for which, for example, the British Imperial Institute had published over 450 reports annually by 1910 on their production, use, processing and commercial potential (Neumann & Hirsch 2000). In British India, forest management plans already regularly included a section on management prescriptions for minor forest products, including the rights and responsibilities for collection by the local rural population.

2. Overseas Development Assistance, conservation and NTFPs

2.1 The upsurge of interest in NTFPs in development and conservation circles

Although development and conservation circles have been interested in NTFPs for decades, there are a number of reasons for the general spread and upsurge of interest amongst them since the 80s, leading to the belief that the promotion of their sustainable use could lead to a win-win situation for poverty reduction and biodiversity conservation.

- The demand for many NTFPs is growing fast (e.g. medicinal plants) and their habitats and populations are increasingly threatened.
- Economically viable NTFP harvesting may be less detrimental for forest cover and biodiversity than timber harvesting.
- Sustainable incomes from NTFP harvesting and commercialisation can provide sufficient incentives for forest and other natural habitat conservation.
- The contribution of NTFPs to the livelihoods of the poor is often high.
- Sustainable NTFP harvesting and commercialisation can contribute to poverty alleviation and sustainable livelihoods for people living in and around forests.

2.2 What's special about NTFPs?

A number of issues concerning NTFPs make them a difficult group of products to frame in terms of their characteristics and actual potential contribution to poverty alleviation, economic development in general and to sustainable natural resource conservation. The ambiguity and confusion over the definition of NTFPs has also not helped understanding and progress in research and development. The key specific aspects of NTFPs, which differentiate them from timber as a natural and economic resource, are:

- What NTFPs are is highly variable and debated (see Box 1).
- Resource assessment of NTFPs is usually complicated for both plant and animal products. For plant products, unlike timber, few standard inventory methods can be applied. Species specific population inventory techniques need to be adapted and combined with appropriate yield assessment techniques to arrive at production figures for such diverse products as roots, tubers, leaves, fruits, sap, bark, etc.
- Sustainable management and harvesting recommendations can therefore be difficult to develop – they may need to be species specific. Traditional knowledge exists but is not made enough use of by development and forestry professionals.
- Quality assessment of the resource is difficult when the valuable ingredient(s) of the NTFP requires complex chemical analysis (e.g. medicinal properties). Further, the concentration and quality of the commercially valuable active ingredient per dry unit weight of the specific plant part can vary substantially according to a number of factors. There is considerable traditional knowledge on many of these quality contributing factors, but it is often being rapidly lost as commercial pressure breaks age old traditions of collaboration between collectors and specialist traders/end users (e.g. in Ayurvedic medicine).
- The end products of many NTFPs are often the outcome of a series of successive, varied and sometimes complex processing measures.
- The quality of many NTFPs is not easy to "see" and adulteration is therefore possible and quite frequent in some product types (e.g. plant based medicine).
- It is much easier to smuggle valuable/trade-banned NTFP products under another species/product name than for timber.
- Certification and fair trade requirements can be particularly difficult and/or costly to introduce, given the large possibilities to hide the true sources of the products.
- Assessing the actual value and potential value of NTFPs is complicated by all the above factors (see Box 2 for some trade value estimates).

BOX 2: The economic value of botanical NTFPs

Any attempt at assessing the global value of NTFPs is obviously fraught with difficulties, be it the value for local collectors and beneficiaries or in terms of final product market value. Nevertheless, with the renewed interest in NTFPs in the 80s, there has been a recognition that the collective trade value of forest products other than timber was large (Belcher *op. cit.*), and some even claim possibly larger than the total trade in tropical timber. Some indicators from the herbal and pharmaceutical trade are telling:

– WHO (2003) estimated that the then global market for herbal medicines stood at US$ 60 billion, was growing steadily, and 25 % of modern medicines are made from plants first used traditionally.
– In 1997, the world trade in raw materials (and therefore excluding subsistence or non-marketed use) for botanical medicine (including vitamins and minerals) was estimated at US$ 8 billion, with global consumer sales at US$ 40 billion (Laird 1999), much of which originating from wild sources including trees; in India for example, 90 % of the plant species used by the pharmaceutical industry are collected from the wild and 33 % of the total need originates from trees (Chakrabarti & Varsney 2001).
– In India, of the approximately 2 500 medicinal plants used by traditional healers, about 500 are utilized by pharmaceutical companies (Rao 2001). India's herbal product industry is said to have had a annual turnover of about US$ 500 million (officially) in the late 90s with about US$ 100 million's worth exported (officially), and was hoping to export 7 times more by 2005 (Chakrabarti & Varsney *op. cit.*). The real volumes and values are probably much higher given that much of the harvesting and trade is illegal, dealing also with species which are officially protected. Several studies show that 20 % to 50 % of the species used are now endangered; ratios of the price paid up the market chain for the same equivalent amount of raw product are often 1 for gatherers, 5 wholesale, 10 exporter and over 1000 for the processed material (Charkrabarti & Varsney *op. cit.*).

2.3 NTFPs' importance revisited

More recently, following systematic and comparative research on the correlations between key issues such as the links between poverty and NTFP use and commercialisation, resource trends and ownership rights, a more differentiated appreciation has emerged between the actual and potential role of NTFPs for sustainable poverty reduction and biodiversity conservation. A number of factors have been identified which determine the conditions under which efforts to promote NTFPs for poverty reduction and biodiversity conservation can realistically lead to win-win situations or indeed may lead to the opposite effect.

The working group "Trees and Forests in Development Cooperation" chose to work on this topic to get a clearer understanding of the potentials and constraints of investing more in efforts to promote NTFPs as a lever for sustainable poverty reduction, and to identify the strategies which would help to increase their potential and overcome the constraints. While recognizing the crucial importance of the range of NTFPs in home consumption and in support to farming systems, the workshop aimed to concentrate on NTFPs which have already or could potentially have a market beyond the area of harvest/production. As such, little reference is made to the very high economic value of some very major NTFPs such as fuelwood, fodder or small building material.

3. The workshop's outcome: "from the El Dorado to the real power games ..."

Some of the doubts concerning the potential for NTFPs to have the positive impacts which have been claimed and promoted in the last two decades can be attributed to the usual danger of extrapolating in a general way from a whole series of location specific situations with different species and products, with different socio-economic and market integration situations, and with regional variations in alternative livelihood options of different income groups.

It also emerges that the hoped for El Dorado of NTFPs for the poor is jeopardized by the power games of those few who do find their El Dorado in NTFPs. This publication is the outcome of the workshop and includes:

– Three main papers;
– Five case studies;
– And some elements of synthesis.

In walnut tree forests of Kyrgyzstan, fodder is one of most important natural resources (Photo by Jean-Pierre Sorg).

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2 Poverty Alleviation and Forest Conservation: The Role of Non-Timber Forest Products

By Manuel Ruiz Pérez

1. Introduction

Structural poverty is one of the most pervasive social phenomena, whose effect is attracting increasing international attention. The definition and assessment of poverty has evolved from a classical income-based measure (the typical below 1$ per day or any other officially established income criteria) to a multidimensional perspective that includes income, health, cultural and social resilience, self-esteem and other parameters (World Bank 2003).

Poverty analysis tends to distinguish between rural and urban poverty, signalling different causes, symptoms and abilities of people to cope within both situations. This has led to different strategies at international level, which tend to focus on primary sector-based activities for rural areas and on providing infrastructure and general skills to enter the secondary and tertiary sectors in urban areas. In both cases, the fight against poverty combines two approaches: a strategic, maximalist approach of eliminating poverty that confronts the structure of the system that generates poverty; and a tactic, poverty alleviation approach that can be easily accepted and carried out within the limits of the system (Angelsen & Wunder 2003). Understanding that the elimination of poverty is the ultimate goal, we concentrate here on the more humble and tractable issue of how to reduce or alleviate poverty especially in rural areas of developing countries, and which has been the focus of our research for over 15 years.

The interest in forest conservation acknowledges the serious pressures on forest, one of the key terrestrial ecosystems, with important global values in terms of climate and biodiversity. Forests are one of the fastest losing ground ecosystems. In order to accurately portray this process we need to distinguish between permanent and temporary deforestation, forest degradation and forest replacement, normally substituting natural forests by plantations (FAO 2001). However, the commonly used statistics are aggregates of these different processes, and there is therefore little possibility for a clear consensus on their real meaning, let alone on their implications and desirability (Matthews 2001, Kaimowitz & Angelsen 1998).

When analysing the pressure on forests we need to separate the direct from the indirect causes (Barbier & Burgess 2001, Geist & Lambin 2001). Concerning the first, we can mention different levels of agricultural activities, from slash-and-burn subsistence to large scale agro-industry; livestock; mining; reservoirs, roads and other major infrastructures; logging and the aggravation through human intervention of some naturally occurring processes like fires, hurricanes, etc. Indirect causes include market pressure and failures (undervaluation of forest goods and services); development plans and tax policies that offer incentives to deforest; land use and tenure conditions that tend to confront the State with traditional property rights; macroeconomic policies such as structural adjustments that force people to depend on forest exploitation to survive and the broad socio-economic context, including population growth, income distribution and external debt.

2. Linking poverty and forests.

There have been three complementary ways to combat deforestation/forest degradation:
- To stop it through the creation of protected areas with different degrees of efficiency and that tend to confront local populations.
- To improve forest management techniques, especially in connection to large scale logging operations.
- To promote a multifunctional valuation of forests that would encourage local actions to protect them.

The latter has the highest potential to combine poverty alleviation and forest conservation, based on two facts: the co-occurrence of forest-rich and economically poor territories in different places – from China to the Congo Basin or the Amazon region – with a clear opportunity to try and find common solutions notwithstanding the debatable causality link and the convergence of the agendas of the conservation and development groups since the 80s (Nepstad & Schwartzman 1992).

This multifunctional valuation is based on three key assumptions (Myers 1988, Panayotou & Ashton 1992, Wollenberg & Inglis 1998):
1. That deforestation is the result of a consistent and pervasive undervaluation of forest goods and services.
2. That increasing the monetary value of forests will make them more attractive than the alternative land use scenarios based on deforestation.
3. That there is a need to develop strategies to add value locally in order to increase the monetary value of forests.

This is the basis of different *'conservation through commercialisation'* approaches that became popular at the end of the 80s with conservation and development groups joining actions to try and capitalise on

the seemingly potential synergies (Evans 1993, Stiles 1994). These approaches could be separated into two complementary groups. On the one hand, the creation of new markets (for example, the promotion of debt-for-nature swaps or the payment for environmental services like water, CO_2 or biodiversity). This has been proposed at various levels – from local to national and international – normally linked to compensation schemes (like the Natural Forest Protection Programme in China, or watershed management agreements in different countries). A number of international initiatives are now ready to be promoted, with the Kyoto Protocol and the associated market for CO_2 emissions standing out as the most promising. As with other innovative proposals, there is always some distance between the theory and reality. Critics of the new market approach stress the difficulty to allocate a market value to intangibles like biodiversity or climate, as well as the real willingness to compensate for global services. Likewise, the issue of national *versus* international sovereignty has been raised.

On the other hand, promoting already existing markets for forest products and services (like timber, NTFPs, biodiversity or eco-tourism) has experienced a thriving and agitated agenda that has had the advantage of the existing experience with such activities. Building on them, frequently more empiricist than well planned actions, has expanded, trying to shorten the path between local producers and their local, national or international markets and to reinforce forest-based local income generation.

3. What role for Non-timber Forest Products?

NTFPs attracted early attention among practitioners and researchers alike, based on the concatenation of three largely untested assumptions:

1. That NTFPs are widely distributed, contributing more than timber to forest people's livelihoods (Myers *op. cit.*, Panayotou & Ashton *op. cit.*).
2. That their harvesting is ecologically more benign than alternative forest or non-forest uses (Peters et al. 1989).
3. That increasing their commercial value will contribute to an increased appreciation of forests, therefore contributing both to poverty alleviation and to forest conservation (Clay 1992).

Almost two decades of accumulated experience have now allowed for a more sober and balanced assessment of the potential contribution of NTFPs to the joint conservation-development agenda (see Neumann & Hirsh 2000, Arnold & Ruiz Pérez 2001 for a review). We present some of those issues below.

In connection with the contribution of NTFPs to forest people's livelihoods, the twin questions raised are how much and who benefits. The extent of the contribution ('*how much*') has delved into the analysis of forest dependency and its level (for instance high-low; permanent-sporadic; the role of NTFPs as safety nets). Their real level of sustainable use has also confronted different visions, from a cornucopian, almost infinite availability (Peters et al. *op. cit.*), to limited physical and commercial opportunities (Godoy et al. 2000). Likewise, the discussion on their future potential has spanned from a new El Dorado that would realize their immense potential (Balick & Mendelsohn 1992) to a rather modest and incremental role (Simpson et al. 1996).

One of the frequently repeated statements is that NTFPs benefit mostly the poorest populations (Cavendish 2000). However, with regard to the '*who benefits*' question, some authors have confronted this with the paradox of the appropriation of the valuable resources by the rich, while the poor are being left with the crumbs of the feast (Dove 1993). Therefore, it is important to understand when the poorest benefit from NTFPs, and what types of development opportunities can these forest products offer to local livelihoods. Our research based on 61 case studies of commercial production of a given NTFP has typified three main situations (later on expanded to five) with regard to the role of NTFPs in the household economy as part of the general household

Even in forest-rich countries, where logging is seen as the most important forest activity, some medicinal plants represent big markets. Pictured is an example from the Congo Basin (Photo by Manuel Ruiz Pérez).

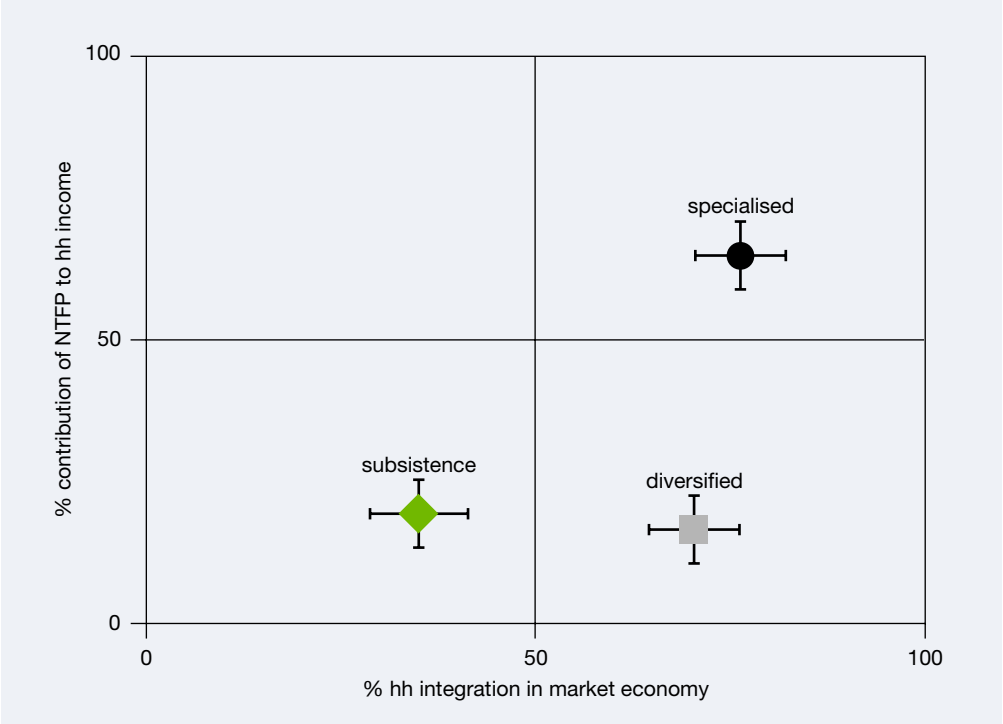

Figure 1: Generalised NTFP based livelihood strategies (hh means household in abbreviated form). The dots represent the mean value for each group; bars indicate the standard deviation of the X and Y axis variables within each group. Modified from Ruiz Pérez et al. 2004a

livelihood strategy (Ruiz Pérez et al. 2004a, Belcher et al. 2005): **subsistence**, with little integration in the market economy, and mainly through the local commercialisation of the NTFPs; diversified, well integrated in the market but relying on a **diversified** portfolio of activities; and **specialised**, also highly integrated in the market and relying to a great extent on the commercialisation of a specialised NTFP (see Figure 1). These strategies can be associated in a general way with regional macro-features in the three main tropical regions (Africa – subsistence; Asia – specialised; Latin America – diversified).

Another important question raised is the balance between farm (or land) and off-farm based income in forest related household economies. Following a generally recognised trend in many countries, forest people's livelihood is increasingly relying on off-farm based activities (Lanjouw & Feder 2001). When the latter represent a good opportunity, the shift from farm-land to off-farm activities tends to be faster in better-off segments of the rural population. In general, we hypothesise (Ruiz Pérez et al. 2004b) that when forest resources offer a good opportunity and a dynamic context this tends to be recognised by the better-off; when it is an average opportunity it is the middle income group that takes most of it; whereas when it is an inferior opportunity in a stagnant context, it is the poorest that will tend to concentrate on them (see Figure 2). This poses the important question of the potential role of NTFPs in rural development and in particular how they can be used for the benefit of the poorest segments of the rural population.

The analysis of the environmental benefits of promoting NTFPs has also advanced several nuances with regard to earlier optimistic assessments. It is generally accepted that NTFP harvesting tends to maintain forest cover, particularly when compared with other alternative land uses (Ruiz Pérez et al. 2005). The effects on biodiversity are variable; NTFP based activities generally maintain a substantial amount of the species naturally occurring, although it certainly affects them, specially those most sensitive to human presence or those which are also collected in parallel with the commercial gathering of the main NTFPs (Peters 1994, Freese 1997, Bennett & Robinson 2000, Ticktin 2004). This extraction can also seriously affect the populations being exploited, particularly in the context of wild gathering and market expansion. The promotion of commercial uses of NTFPs can then be viewed as a double-edged sword, with potential and risks (Redford 1992).

It is worth stressing the potential conflict between short-term and long-term effects. Thus, commercial collection of NTFPs may, in the short term, represent a good strategy for local populations to maintain the forest condition in a state where it will continue to produce a number of subsistence and marketable products. However, the system will only last as long as the alternatives are not perceived as better (Wilkie & Godoy 1996) in the longer term – for instance the money

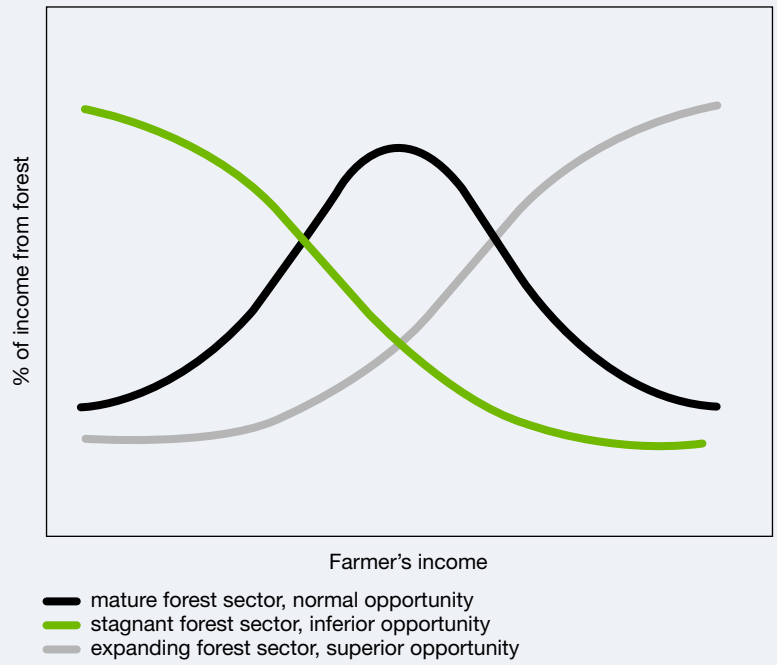

Figure 2: Theoretical model of contribution of forest sector to rural people's income for different forest development contexts. Modified from Ruiz Pérez et al. 2004b.

earned through NTFPs may be invested in other options that may increase the pressure on the forest in the long term. That is the case of savings used to increase smallholders' livestock assets, the acquisition of mechanical saws or the improvement of roads that will have an increased effect on the expansion of agriculture and other commodity-oriented production at the expense of forests.

4. Concluding remarks

Forest populations are not static societies that hinge upon an ancestral way of life. They should be viewed as flexible, dynamic and able to create, adapt and respond to new opportunities. Research has showed that forest based income can sometimes be such an opportunity to improve or to gain access to markets. This role, however, is normally limited and its realization seems to indicate a relationship between relative local social positions and the capacity and resources to take the opportunity of the potential offered (knowledge of markets, possibility to invest in risk, contacts, power relations, time availability, different opportunity costs and ability to cope with these, rights, etc.). While working on this as a development tool two key considerations should be followed: not to raise unrealistic expectations and not to open opportunities in such a way that could increase the level of dispossession of the poor.

Similarly, NTFP based activities could help prevent some of the environmentally worse-off scenarios while allowing for a reasonably good level of forest coverage, biodiversity and forest-related environmental services. However, careful monitoring of individual species under particular pressure, of the risk of increase forest degradation through the expansion of the range of forest activities and areas being exploited, and of the potential trade-offs between short-term *versus* long-term processes should be implemented.

While NTFPs can sometimes be a way to offer development opportunities to poor populations in a forested environment, it can also be a poverty trap that would limit people's options and would risk the future of the forests upon which they live. Applying the general trends observed and lessons learnt to the concrete conditions of each particular case is the real challenge for development and conservation practitioners.

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With regard to poverty reduction, the impact of NTFPs on poverty cannot be generalised. When they are locally processed however, they are usually advantageous for the regional economy (Photo by Manuel Ruiz Pérez).

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3 Commercial Issues Related to Non-Timber Forest Products

By Ousseynou Ndoye

1. Introduction

NTFPs are essential for the livelihood of forest dependent people and they have social, cultural and spiritual importance. For example, palm wine has been used for centuries to entertain social relationships. Furthermore, kola nuts have very important cultural values in many parts of Africa at weddings and other traditional ceremonies. The commercial issues related to NTFPs and discussed here focus primarily on markets and their role in the process of exchange and in assembling and distributing forest products in space, time and form that is desirable to consumers.

In Africa, many NTFPs have been traded for ages. Shea butter has been traded since the fourteenth century (Schreckenberg 2004) while *Aframomum spp.* began to be transported to Europe as a spice and condiment in the early medieval period (Sunderland et al. 2004).

The commercialisation of NTFPs is important for several reasons:
- It enables rural dwellers and poor urban households to diversify their source of incomes, which contribute to their food security and reduce their level of poverty.
- It increases the economic value of NTFPs thereby increasing the awareness and incentives for local communities to conserve many forest products.
- At the local level, it increases rural employment, especially for women and minorities.
- It increases the awareness of decision makers and donors of the value of forests products other than timber and therefore may encourage them to reorient their policies and approaches in a way that integrates both timber and NTFPs.
- It provides more opportunities for regional trade within Africa and between Africa, Europe and North America.

2. Socio-economic potential of NTFPs

NTFPs and poverty alleviation

NTFPs are essentially a niche for the poor (Arnold & Ruiz Pérez 1998). That is the reason why any effort aimed at developing the sector will be very important for poverty reduction. According to the World Health Organisation (WHO 2003), 80 % of the population in Africa use NTFPs for primary health care and Ndoye et al. (1999) estimated that 70 % of local communities use several forest products for health purposes. The reasons are growing poverty and lack of opportunity in rural and urban areas, which prevent rural dwellers and poor urban households from affording the higher costs of pharmaceutical products.

Figure 3 compares the costs of modern medicines and the costs of traditional medicines to cure, with comparable effects, different illnesses. On that basis, rural

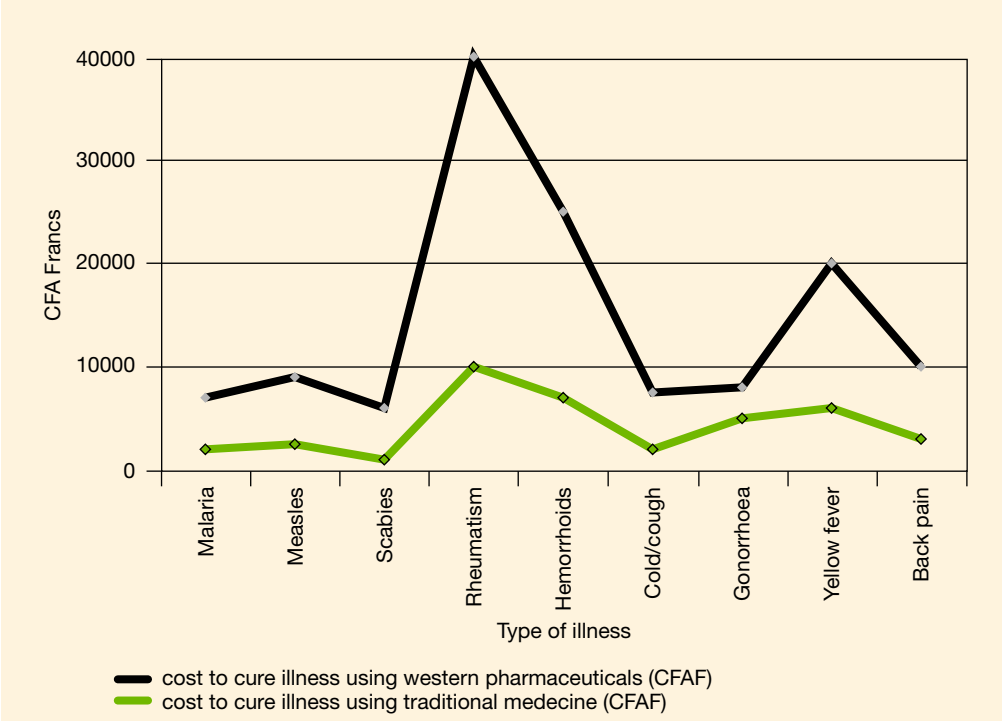

Figure 3: Comparison of costs of modern and traditional medicine

communities would be more rational in using traditional medicines than using modern medicines because they are cheaper.

NTFPs and market examples from Africa
The market value of NTFPs can be very important. In Cameroon, the commercial value of *Ricinodendron heudelotii* in a single market, New-Bell, Douala, was estimated at US$ 248 700 in 1998 and US$ 464 235 in 1999 (Ngono & Ndoye 2004). The annual value of the African plum *(Dacryodes edulis)* market in Cameroon was estimated at over US$ 7 million and exports to the expatriate African community in Europe and the U.S.A. were valued at over US$ 2.2 million (Awono et al. 2002b). The total commercial value of *Irvingia spp.* trade in the year 2000 in ten major markets in the forest zone of Cameroon stood at over US$ 825 000.

Regional trade remains an important aspect of the NTFP economy in Cameroon. For example, the value of *Irvingia spp.* trade to Gabon, Equatorial Guinea, Nigeria and Central African Republic was estimated at US$ 260'000 in 1997 (Ndoye & Ruiz Pérez 1999). These high market values are repeated in Rio Muni, in Equatorial Guinea, where Sunderland et al. (1999) reports that *Irvingia spp.* kernels are sold more widely than any other NTFP. Sales of processed *Irvingia spp.* kernels to the United Kingdom, America, and Europe are reported, with about 100 000 potential consumers in these markets (Lesley & Brown 2001).

European and American pharmaceutical companies are increasingly importing NTFPs from Africa for their chemical properties useful for the production of organic medicines. Examples include *Prunus africana, Pausinystalia johimbe, Voacanga africana, Strophanthus gratus and Physostigma venenosum* (Walter 2001). In 1999, the commercial values of *Prunus africana* and *Pausinystalia johimbe* bark to the economy of Cameroon were US$ 700 000 and US$ 600 000 respectively (CARPE 2001). For example, *Prunus africana* extract, used for the treatment of benign prostate hyperplasia in Europe and America, was worth US$ 200 million to pharmaceutical companies in 1999 (CARPE *op. cit.*).

Based on a purely illustrative per unit weight comparison (i.e. not production), the prices of some lesser-known NTFPs for local income generation are currently higher than for cocoa in Cameroon (Ndoye & Tieguhong 2004). As illustrated in Figure 4, the average price of a kilogram of *Irvingia spp.* and *Ricinodendron heudelotii* were more than 200 % higher than the average price of the same quantity of cocoa beans between 1996 and 2003. However, to go beyond such price observations, i.e. to assess and compare cocoa's economic potential with that of NTFPs for the same site, one would need to take into account other variables such as unit area production and their yearly fluctuations, returns on labour input, average product price and their fluctuations, etc.

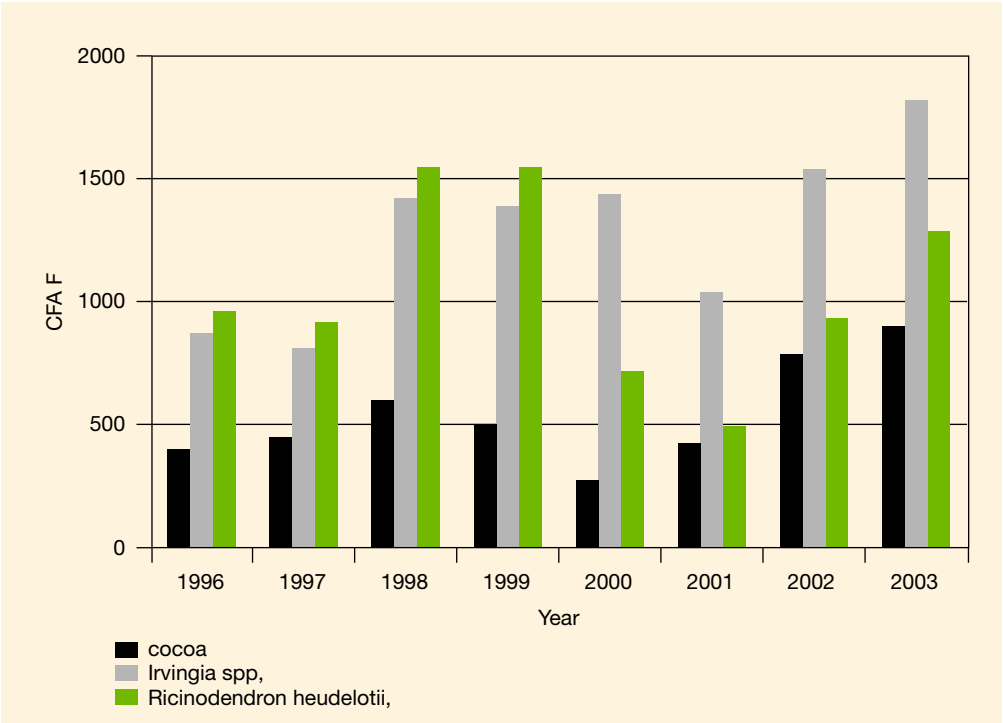

Figure 4: Illustrative comparison of the price per kg of cocoa and other NTFPs

Box 3: Research and training for NTFP market development: women traders in Cameroon

In 1996, CIFOR started a research program on the markets of NTFPs in the Humid Forest Zone of Cameroon. 1100 traders, twenty-eight markets, selected according to their roles in assembling and distributing NTFPs, were included in the research program as well as markets at the borders between Cameroon and neighbouring countries. In 2000, CIFOR started training traders using the information collected in the market surveys. The training focused on the following modules:

Market trends: This module discusses the types of markets (local, regional, national borders, international) as well as the different channels (short, long distances) where NTFPs flow from producers to consumers. Many traders do not realize that they can increase significantly the price they receive by selling their NTFPs in more distant markets.

Product specialization: This module discusses the advantage and disadvantage of both specialization and diversification.

Storage of forest products: The length of storage of NTFPs depends on the perishability of the NTFP, the availability of adequate storage facilities and the speed at which stocks are rotated. The advantages of storing NTFPs are highlighted in this module (increased profit, reduced risk due to supply shortage).

Availability of raw material: Traders have difficulties identifying the areas that supply NTFPs. The objective of this module is to provide information about villages and markets that are major sources of NTFP supply to guide the decision-making process of traders.

In 2003, CIFOR assessed the impact of the training program with 72 traders (CIFOR 2003). According to 81 % of the traders, the information that CIFOR provided had helped them increase their revenues by an average of 55 %. This experience shows that targeted research can provide information that can be used to improve the marketing strategy and incomes of traders.

NTFP markets and women

Women are much involved in the NTFP gathering, processing and commercialisation, which indicates that the potential is there for NTFP related activities to empower them and raise their status in the household and in the community at large. CIFOR research has shown that women represent more than 94 % of traders operating in rural and urban markets in Cameroon (Ndoye et al. 1997). In Ghana, women coordinate 85 % of the chew-stick trade. In South Africa, women carry out more than 80 % of the harvest and trade of umemezi *(Cassipourea flanaganii)* (Sunderland et al. 2004).

3. Economic failures

There are several shortcomings that are related to the commercialisation of NTFPs. First of all, there is **an increased pressure on the resource base** due to higher demand and unsustainable harvesting methods. According to Ndoye & Tieguhong (2002), between 1983–1985 and 1998, the average intensity of monthly harvest of *Pycnanthus angolensis*, used as a cure for breast cancer, rose tenfold in and around Mbalmayo Forest Reserve in Cameroon; that of *Drypetes gossweileri*, used as cure for sexual impotence, rose eightfold. Over-harvesting has led to some species becoming scarcer and such scarcity translates into increasing costs of treating common ailments. The implication is that the poor may no longer gain access to medicinal cures as need arises.

Many trees exploited by timber companies have important non-timber values to local communities for subsistence, income and health purposes (Laird 1999, Ndoye & Tieguhong *op. cit.*). **61 % of the top timber species exported from Cameroon have non-timber values** and are used by local communities and poor urban households (Ndoye & Tieguhong 2004). Thus uncontrolled activities of timber companies are likely to deplete key forest resources and place high costs on forest-dependent communities.

Another difficulty is related to the road controls by police, gendarmes and municipal authorities leading to payment of "informal taxes" or bribes. For example, according to Awono et al. (2002a), many NTFP traders in Cameroon are not aware of the levels of taxes they need to pay when transporting products within and between countries, leading to widespread bribery and corruption both in the interior of the country and at the borders. Furthermore, CIFOR research showed that **"informal taxes" can represent up to 20 % of the traders' gross revenue**. This creates a disincen-

tive for traders who are obliged to transfer these costs in the form of lower prices to farmers and higher prices to consumers.

4. Potential contribution of markets to poverty reduction in a sustainable way

NTFP markets are often thin, meaning that a small reduction in supply has a large effect on quantity marketed (Ndoye et al. 1999). This changes the assembly and distribution functions of markets from year to year. One way to limit the effect of thin markets is to improve the supply through technologies like for instance domestication methods. Domestication is expected to raise the productivity of NTFPs far higher than that obtained in natural forests.

To achieve win-win outcomes, i.e. to reconcile conservation and development goals, it would be necessary to work with rural communities by informing them about the status of their resources and the need to manage them in a sustainable way. It is also important to explain to communities the sustainable rate of harvest of different NTFPs, the consequences of not defining management norms and the tradeoffs between private gains and social costs of resource depletion. Communities would then be helped and taught alternative gathering and harvesting methods that would provide more sustainable outcomes.

Improving the marketing strategies and incomes of rural dwellers involved in NTFP production and commercialisation is an important task in line with the Millenium Development Goals (MDGs). This can be achieved by stimulating cost effective small-scale forest based enterprises that will use labour intensive technologies based on selected NTFPs. Strategies may include: carrying out feasibility studies on NTFPs based enterprises and discussing with communities about various options and their profitability, training local communities (including minorities and women) on how to commercialise their products by assisting them to take advantage of selling opportunities in distant markets, how to analyse and capitalize on market trends, how to take advantage of commodity chain analysis and how to employ strategies such as vertical and horizontal integration (e.g. cooperation with other small-scale entrepreneurs).

Many local initiatives and institutional arrangements related to harvesting and marketing in groups or cooperatives should be promoted to make sure **the benefits from NTFPs are maximized and shared equitably for the prosperity and economic growth of communities**. Group marketing enables rural producers to integrate several marketing strategies and to command higher prices along the commodity chain if the quality of the product is guaranteed. Furthermore, group marketing provides the opportunity for economies of scale in transport and for better bargaining power to obtain higher product sale prices.

Box 4: Group marketing

The Mapanja *Prunus* Harvesters' Union is involved in harvesting and commercialisation of *Prunus africana* around Mount Cameroon. Farmers belonging to the Union get more development, conservation and financial benefits compared to those who are outside the organization (Tieguhong et al. 2005). The Center for International Forestry Research (CIFOR), the World Agroforestry Center (ICRAF), the Central Africa Regional Programme for the Environment (CARPE) and other partners are working jointly in similar experiences in the Humid Forest Zone of Cameroon.

More investment in infrastructure and processing technologies is needed. Governments and the private sector need to invest and develop infrastructures such as roads and storage facilities to improve access for rural production and trade. This will lower transaction costs and increase rural benefits from production and trade of NTFPs.

Secured property rights on land and on the forest resources are key elements that will stimulate rural communities to invest in tree planting and to adopt improved technologies related to domestication, harvesting, processing, and commercialisation. Without these rights, it will be very difficult to achieve both livelihood improvements and resource conservation.

5. Conclusion

NTFPs are important in the livelihoods of forest dependent people and particularly women, who play a crucial role in their collection, processing and trade. Appropriate commercialisation strategies of NTFPs increase the opportunities for forest dwellers, increase their economic value and provide information that will raise the awareness of policy makers and donors of the importance of these forest products and the need to incorporate them in official statistics and poverty reduction programmes. To maximize the potential contribution of NTFPs to livelihoods, there is a need to explore local, national, regional and international markets.

Women are not only involved in harvesting but also in trade, especially in Africa. In Cameroon, they represent the vast majority of NTFP traders (Photo by Brian Belcher).

There are many challenges that need to be dealt with to enable rural dwellers to take more advantage of NTFP development. These are, among others, providing improved technologies to increase the productivity of NTFPs, helping organize local communities in group marketing and providing a cost-effective market information system. Participatory research, like the experience that CIFOR developed with women traders in Cameroon, needs to be scaled up in other provinces of Cameroon and in other countries of Central and West Africa. The capacity of local NGOs should also be developed to enable these institutions to scale up this work with local communities and traders in a sustainable way. Finally governments and the private sector have an important role to play by reducing transaction costs (especially eliminating the unnecessary road controls) and improving road and market infrastructure (security, electrification, storage).

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4 NTFP Development and Poverty Alleviation: Is the Policy Context Favourable?

By Geneviève Michon

1. Introduction

For centuries, people of the tropical rainforest have been collecting NTFPs either for their subsistence or in exchange for manufactured products and money. An important question for science and development is to assess how far NTFPs presently do, or could, at local level, help alleviate poverty and improve the welfare and livelihoods of forest-dependent communities. In many parts of the world, subsistence gathering is still important. Hunting, fishing and plant gathering provide an important part of the diet and health system of rural people, and an essential part of plant material for household use. NTFP collection for trade ("extractivism") has been proposed as a promising strategy for poverty alleviation in forest areas. But how far does reality provide substantiating evidence for this premise? If "extractivism" – an old practice in the tropical world – has indeed often given rise to the fortunes and social upgrading of forest product traders, the role of NTFPs in the success of economic or social strategies of local collectors is less obvious.

Part of the explanation for this situation is linked to the evolution of the industrial and economic context. Since the Second World War, many commercial NTFPs have lost their economic importance. Some markets persist today for niche products, and a collection of natural chemicals for pharmaceutical or insecticide industries is emerging as a promising domain. The evolution of the global context is itself linked to macro-economic policies adopted at national and international levels. But this evolution is only part of the answer. NTFPs, by definition, belong to the forestry sector, which is, historically, a highly regulated sector (see for example a critical review in Fay & Michon 2005). Forest policies and regulations do affect the social and economic success of NTFP management at local and national level. They define who has access to which kind of resources and in which kind of forests. They determine how benefits of forest management, collection and trade are shared among stakeholders. Forest policies and regulations are therefore essential in the determination of the social and economic attributes of forest management, including NTFP collection and use. How far do these policies help NTFP management to benefit local people? How can situations be changed? To answer these questions, it is important to consider the basic structures of NTFP economics at large, and to discuss how these structures are impacted or even determined by forest – and non-forest – policies. We will discuss here these structures (who are the primary collectors, where do they collect, for which type of markets, which kind of relations link collectors to users or traders), and see which are the main questions that need to be addressed.

2. NTFP collection: Who are the collectors?

In most forest areas, NTFP collectors are still people belonging to local forest-dependent communities. Subsistence products are collected by various social categories, including children, women and elders, whereas the collection of commercial products is usually dominated by young men. However, more and more professional collectors from outside enter the forest and compete with local collectors. In Indonesia for example, these outsiders specialize in the collection of high value products such as eaglewood and birds nests (Momberg et al. 2000). Professional collectors from outside deliberately ignore local rules regarding access, benefit sharing, or resource management. They collect as much as they can in the shortest time possible, a very damaging strategy for the resource. These outsiders also specialize in the collection of new products for emerging markets (medicinal plants, ornamental fish and birds, forest pets), which local people usually ignore (Michon 2005). They apply a "harvest-exhaust-move" strategy. When local people understand the potential benefits of the harvest of such products, the resource is already declining, and local benefits are meager.

Policies aimed at reducing this unbalanced competition between locals and outsiders have to consider the difference in both the logic and the practice of forest product collection by the two main categories involved. These issues concern in the first place the theory and practice of access rights to forest resources. In countries with a strong centralization of power and administration, access to forest lands and resources is highly restricted and totally ignores local customary systems (Fox 1993, Lynch & Talbott 1995). The granting of collection rights occurs through temporary permits, or through structured concessionary or auction systems, which target outside capital holders more than local people. Local people are therefore considered as "illegal" collectors on their own customary lands and for resources they manage under customary rules. This unbalanced treatment of local *versus* outside systems is experienced by local people as an abuse of power. Besides, the *de facto* situation of open access which affects many forest lands in the tropics increases conflicts between locals and outsiders and favours unsustainable collection practices, and maintains low prices and therefore low returns for collectors. Community forest management systems, joint management be-

tween foresters and local communities, are well tried and documented solutions to integrate local people in the management of and benefits from forest lands. However, balanced systems, between local people, legitimate outsiders, concessionaires and national authorities, must be sought after more systematically.

3. NTFP collection: Who are the actual beneficiaries of collection and trade?

NTFP collectors harvest forest products for various destinations: local direct consumption or home industry, local traders, regional industries, middlemen involved in large trade chains – often for export markets – or official concessionaires. This variety of destinations makes it difficult to draw general conclusions about the modes of benefit distribution between the different parties involved. In addition, conclusions about economic benefit sharing must be confronted with the issue of the distribution of social benefits. Some local and still "traditional" collection organizational setups remain very unbalanced (for example the numerous systems of debt creation linking collectors and middlemen, concessionaires or patrons, with the "aviamento" of the Brazilian "extractivism" as the classic case study: Aubertin 1996) with patrons drawing the largest share of the economic benefit and redistributing only some social benefit. Other systems are economically unsatisfactory but are based on satisfactory social complementarities, as demonstrated in a case study concerning benzoin[1] collection in North Sumatra, where the apparent "exploitation" of collectors by village traders, shown in the low prices given by the latter to the former, is both explained and balanced by the social attributes linking both categories (Katz et al. 2002). Other systems appear to be very much balanced in terms of economic and social benefit sharing, as demonstrated in the case of damar[2] collection in the south of Sumatra: considering inputs – labor, investment and risk – and outputs – gross and net benefits, collectors receive an advantageous share of the added value generated by the collection, handling, sorting and trade (Michon & al. 2001).

Policy issues here mainly concern access to capital for local collectors, which is a key point. Facilitating systems of micro-credit could help alleviate the chronic spiral of poverty of local collectors and relieve them from their exclusive relation to their patrons, or at least increase their bargaining power.

In this case from Indonesia, the harvester takes advantage of a tree that his ancestor planted in 1927. Family networks are of crucial importance with regard to access to resources (Photo by Christian Küchli).

4. NTFP collection: In which "forest" does the collection take place?

The vision of NTFP collection taking place only in untouched, primary forests is somewhat misleading. Forest extraction concerns all kinds of lands, including "primary" and "secondary" forests, but also what is classified as agricultural lands. A large part of forest collection is usually carried out in what we have called "domestic forests" (Michon *op. cit.*): forested areas that bear trees which have been planted and forests that have been established and appropriated by local farmers. Domestic forests include managed "natural" forest as well as forest fields and fallow lands, and include "agroforests", which are mixed stands of trees cultivated for commercial purposes – often NTFP production. In Indonesia, domestic forests provide 95 % of the local

fruits marketed in the country, around 80 % of the Dipterocarp resins traded in and outside the country, for a significant part of the national rattan and bamboo market, an immense part of the firewood used in the country, and the majority of such items as medicinal plants and handicraft raw materials. Moreover, they ensure the self-sufficiency of most rural households in complementary foods, fuelwood as well as light and heavy construction material (Michon & de Foresta 1999).

The use of domestic forests is governed by specific rules and obligations, which often enters in conflict with national forestry policy and regulatory frameworks. Currently, these frameworks apply to areas that are designated by law as forests and defined as requiring special management, which implies highly restricted use and management. They are totally counterproductive to NTFP management in domestic forests (Fay & Michon *op. cit.*) as they do not accommodate the specificity of these forests, and therefore often lead to their destruction, and to the loss of a great potential for NTFP production. For example, the export restriction for raw rattan in Indonesia, that occurred in the late 80s, and which was officially designed for the protection of the natural rattan stands, has resulted in the total collapse of cultivated rattan forests in Kalimantan (Fried 2000). This policy had been formulated on the assumption that, given the quantities exported, harvesting levels were undoubtedly totally unsustainable. It had not taken into account that most of the exported rattan came from planted forests owned and managed by local communities. In Indonesia, policies concerning sandalwood collection on the island of Timor were so repressive that local people started uprooting sandalwood which had regenerated naturally on their land (Michon *op. cit.*).

NTFP policies should therefore pay particular attention to all kinds of local initiatives for NTFP intensified management and cultivation. They should particularly consider the relevance and legitimacy of management rules underlying cultivation, including:

- Access and property rules, including a blend of individual and collective rights and obligations, including rules concerning lands, but also on specific portions of space, or on trees or other resources.
- Customary management rules and practices.
- Local economic, but also social attributes of cultivated forests: role in livelihood strategies, role in social cohesion and/or stratification of families and village communities.

This implies the acknowledgement of local management as a specific domain of productive activity, independent of the legal domain in which it takes place.

5. NTFP collection: For which markets?

NTFPs are collected for a great variety of market types. Local, small-scale markets are concerned with products for direct consumption – fruits, fish and meat, vegetable and spices – or home industries. Regional or national markets include "traditional" markets, and emerging urban markets. "Traditional" markets are not uniform. Like local markets, they may directly sell forest products to urban consumers: fresh or processed fruits, medicinal plants. Many of these markets are growing in importance as urban centers and the urban demand for forest products are themselves growing: (a good example is the increasing importance of the numerous Amazonian palm berries and juices sold on the Belem market in Brazil (Muñiz-Mirit et al. 1995), or the growing bush meat markets in the large cities of central Africa (Bahuchet et al. 2001). National markets also target industries: medicinal plants for Ayurvedic medicine factories in India, rattan canes for furniture industries or benzoin for cigarette factories in Indonesia for example. Emerging urban markets concern "new" products: for example forest pets – turtles, snakes, baby monkeys and civets – and singing or ornamental birds, or tree ferns for orchid growing in Indonesia. International markets sell either traditional products in niche markets – dragons' blood for lacquer work, exported from the forests of Sumatra to Chinese factories, rhino horn exported from Africa and Indonesia to traditional medicine factories in China, raw material for large industries – rubber and other latex, resins, gums –, or new products for emerging markets: plant metabolites for pharmaceutical industries, genes for life industries.

NTFP collection for local markets has proven relatively sustainable, though not providing important benefits at local level. The history of forest products collection and trade for large national or international markets has shown high instability, linked to great fluctuations in forest product demand by industries. This has entailed opportunistic collection strategies, where collectors switch from one product to another (see for example for Borneo: Sellato 2001).

The value added along the trade chains can be quite substantial for products like medicinal plants, but remains low for others like gums. The percentage of the total value captured at local level is also highly variable. The lack of bargaining power of the collectors facing organized traders and fluctuating international markets is frequent and results in a low economic profitability of the collection activity itself. However, the common assumption that local collectors or traders are "exploited" by middlemen is not necessarily true, and policies aimed at reforming existing trade chains must be de-

What looks like a natural forest is in fact a Shorea agroforest which, in addition to producing resin and other products, contributes to maintaining key forest environmental services (Photo by Christian Küchli).

veloped very carefully (Michon *op. cit.*). In Indonesia for example, the replacement of "traditional" clove traders who, supposedly, were exploiting local collectors by government-controlled entities has resulted in a serious drop in prices, while depriving local people from the social advantages of the former organization.

Policies targeting better valorization at local level are more promising. Through administrative and financial support they can help the development of local processing, which is a good way of adding value to natural products. Policies targeting the remuneration of property rights (property rights on the resource or intellectual property rights on related knowledge) are still weak as the legal and financial mechanisms involve difficult procedures (Vivien 2002). Certification systems are certainly promising as green labels, fair trade and appellations of origin constitute alternative mechanisms for adding value at local level; these should be more systematically explored and supported by national and international policies (Cormier-Salem et al. 2005).

6. The numerous levels of regulations and rules for NTFP collection, use and trade

NTFP collection, use and trade are regulated at different levels, which include local, national and international levels.

1. Regulations at local level: are they compatible with national policies?

The first level for NTFP regulation concerns customary rights and institutions. Even though these systems are, by essence, quite variable from one place to another, they show general characteristics:

– They do not emphasize uniform rights, but bundles of specific rights tailored according to resources, users, or uses.
– They involve rights AND obligations.
– They are quite flexible and adaptive, and easily evolve as the context or the needs change.
– They are recognized and acknowledged by all people concerned in the community.
– They are usually not understood/recognized by national constitutions/legislations.

It is important to state that these local regulation systems do not necessarily target or guarantee sustainability, unless there is a feeling of threat on the possibilities to continue the economic activity. However, sustainability may come as a side effect of given access systems or management practices. These local regulation systems do not necessarily guarantee an equitable sharing of economic benefits at the community level. Even if the social benefits or advantages are satisfactory for all the various segments of the community, many local regulations systems are aimed at strengthening the social and political position of community elites, and not to distribute the income derived by forest management to all members in the community.

The main problems arise when national forest regulation systems ignore these customary systems. Conflicts between national laws and local systems entail, among others, unsustainable management or mining of forest resources, abuse of power and grabbing of economic benefits by local elites, and social disintegration. Therefore, policies targeting sustainable NTFP management have to assess the relevance of local management systems, and to find theoretical and practical ways to accommodate local rights in national systems.

2. Regulations at national level

National public policies targeting NTFP management are closely related to the national forestry policy framework. In Southeast Asia and in Africa and to a lesser extent in Latin America, these frameworks institute a particular "forest domain", distinct from the agrarian domain, administered by the State (in extreme situations as in Indonesia, local forest people are considered as squatters on public forest lands: Fay et al. 2000, Santosa 2002). They do not recognize the legitimacy of local forest management on forest lands and the State designates the legitimate managers (generally the State itself seconded by professionals and contracted agents).

Forestry frameworks regulate NTFP collection, use, trade and processing through established norms including concessionary rights, harvesting restrictions and market regulations. These norms most often do not take into account the actual situation and practice of NTFP collection and use at local level. As a result, the practices it defines are often incompatible and/or in competition with the actual collection and management by local people, which results in reduction or restriction of potential income, overharvesting or resource destruction. In addition, NTFP regulations affect products irrespective of the management system in which they occur, making harvesting illegal even from cultivated resources, thereby clearly creating disincentives for NTFP cultivation (Michon *op. cit.*).

At national level, it is urgent to set criteria for determining what forest lands/products need to be regulated and how. This implies re-examining which forestlands do not require state regulation, specially with respect to EXISTING local management systems, and the removal of forestry-related policies and restrictions in areas where such restrictions are not warranted.

3. International policies and regulations affecting NTFP management

International policies and regulations affecting NTFP management include international market regulations (international trade conventions and rules, property rights, labeling systems) or relate to international conventions related to conservation and biodiversity (Convention on Biological Diversity -art. 8J-, CITES).

Policies related to NTFP international trade are marked by a strong lack of transparency (concerning nomenclatures, product quality, trade chains), which entails difficulties to improve economic efficiency and benefit distribution. These policies are tailored for products other than NTFPs, other types of actors than local forest-dependent communities, and to other types of logic than modern market logic. Most of them are NOT adapted for forest products, actors and logic, and have more negative than positive effects on local livelihood conditions.

Regulations evolved from international conventions may on the contrary provide opportunities for local communities to benefit from NTFP management and use at an international scale, but practical limitations (precise knowledge on opportunities, ability to argue for forest-dependent communities at international level) are numerous.

4. The accumulation of rights and regulations

In each single location, NTFP management is affected simultaneously by local, national and international regulations. Observations show that these regulations are often contradictory, or incompatible, and that this accumulation is totally counterproductive. For more benefits to be obtained by local forest-dependent communities, it is urgent to re-examine the relevance of each type of regulation and the compatibility between the different policies, laws and regulations at the different levels.

7. Conclusion

NTFP management strategies are not uniform: various categories of people engage in management for a variety of reasons and in various ways. The social and economic benefits derived from this activity are also highly varied.

In general, NTFP management remains a highly unpredictable occupation for local forest-dependent communities. This is partly due to the highly fluctuating and fleeting nature of the external demand in forest products as conveyed by outside traders. Uncertainties are also introduced by the frequency of abrupt changes in policies – or implementation of policies – affecting NTFPs, such as in Indonesia the imposition of concessionary or auction systems for the exploitation of edible birds nests, or the creation of a unique buying body as the buying system established for rattan in the late 80s. Such changes may deeply affect prices paid to producers and lead to the collapse of the collection, as has been reported for birds nests.

Farmers react to this double uncertainty by maximizing the profitability of extraction. The concern for immediate sustainability is always undermined by the lack of sustainability in the market and policy environment. In boom periods, or in times of favourable policies, like today with new systems linked to the decentralization of forest management in many tropical countries, the incentives for harvesting as much as possible – i.e. immediate profit, competition with outsiders, abuse of power from external authorities on local collectors – are obviously higher than incentives for sustainable management. However, commercial NTFP management, considered as an economic activity made of a succession of collecting booms, often appears to be quite sustainable and profitable for forest-dependent communities over long periods of time. The main threat to the future of local NTFP management, and to the benefits for local communities, is in many cases not the intensity at which the activity is carried-out, but the present forest conversion dynamics to non-forest uses which do not benefit local people, and which are strongly determined by global national and international policies.

In any policy support programme, local NTFP management should be considered in a global environment relating local dynamics to national/international market and policy trends in short, medium and long term. Today, there is a marked tendency to mine products in natural forests, and to intensify NTFP management through domestication, cultivation and the creation of stronger property regimes. It is therefore more important for policies to foster the maintenance of a diverse "domestic forest", controlled by local practices and acknowledged rules that can be used in a flexible way, than to edict policies and regulations aimed at the protection of specific products. This is essential since the complementarity between "forest" and "agriculture" is still essential in all rural areas where farmers do not have enough capacity for income accumulation and are still quite exposed to risk. Maintaining patches of appropriated forests in farmlands, in order to retain the forest/agriculture complementarities is the key for livelihood improvement, at least until other strategies can be used on farmlands. This, again, concerns policies that are not strictly restricted to "forest", but addresses more globally resource management and land use.

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1 Benzoin is a fragrant resin, traditionally collected in the forests of Southeast Asia, used in Indonesia in cigarette production, and exported to the Middle East and Europe for various purposes: incense factories, pharmaceutical and perfume industries.

2 Damar is a resin exported as a raw material for paint and varnish industries.

5 NTFP Promotion in Vietnam: Practical Experiences of a Development Project

By Ruedi Felber

This contribution describes the experiences of the Extension and Training Support Project[3] (ETSP) in NTFP promotion in some districts of Vietnam. ETSP is contributing to poverty alleviation in upland areas through improved training and extension services in natural resource management. Its key approaches at local level are participatory planning and identification and promotion of promising best practices.

Vietnam is achieving significant progress in combating poverty. However, poverty rates are still very high amongst ethnic minorities who represent 15 % of the population and who are mainly living in rural upland areas where forest land is dominant. The forest is an important source of sustenance for the local population. NTFPs play an important role in this regard by providing food, medicines and construction materials, especially for ethnic groups.

Field studies initiated by ETSP (Wetterwald et al. 2004) document that most households collect or cultivate NTFPs and more than 100 species are used in a commune. These NTFPs are of multiple purpose and are used either for home consumption or for trading. But as soon as there are high market demands for high-value NTFPs such as bamboo or rattan, they are over-exploited.

However, there are limited income-generating opportunities from natural growing NTFPs to significantly increase livelihood opportunities. Hindering factors are the lack of appropriate management techniques, unclear tenure and user right situation and the complex and fragmented market system for NTFPs (many trading actors, unstable supply, low values and price fluctuations).

Despite the deprived economic situation, there are promising local initiatives such as small-scale NTFP processing initiatives (broom and hat production), cultivation of well-growing NTFPs in home gardens and fields near the villages (bamboo shoot production) and enrichment plantation in natural forest (cinnamon) which prove the potential to develop niche markets.

To foster such opportunities, an adapted toolkit for participatory field methods is needed to identify potential NTFPs and adequate management techniques and to establish efficient links to private sector market actors.

ETSP has been intensively adjusting and applying a set of tools essential for NTFP promotion:

Broom production by a women's group of Nam Dong, Thua Thien province (Photo by Ruedi Felber).

- Participatory field studies to grasp the potential and problems regarding the role of NTFPs in the livelihood system of the rural poor.
- Commune development planning using PRA tools with which need-based activities are identified and prioritised.
- Rapid Market Appraisal with which valuable NTFPs are identified, their market systems are described and the basis for market interventions are provided.
- Participatory Innovation Development which relies on the diverse knowledge of farmers, extensionists and researchers. With PID, new technologies and approaches are identified in experiments and promising results are then scaled up through extension activities.

In ETSP's experience, community forestry – based on clarified land tenure and user rights – offers a promising framework to promote the sustainable economic use of NTFPs respecting the combined goals of benefiting local low-income producers and maintaining ecosystem services.

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3 ETSP is financed by the Swiss Agency for Development and Cooperation (SDC) and implemented by Helvetas, Swiss Association for International Cooperation.

6 NTFPs and Poverty Alleviation in Kyrgyzstan: Potential and Critical Issues

By Kaspar Schmidt

The State owned walnut-fruit forests in Southern Kyrgyzstan provide a wide range of different NTFPs, including walnuts, fuelwood, hay, rose hips, wild apples and plums, mushrooms, medicinal herbs, wild food-plants and berries. Some of these products, in particular walnuts, wild fruits, fuelwood and hay, play a significant role in the livelihoods of local people during the ongoing difficult process of transition to a market economy. Other potentially marketable products are currently not being used, mainly due to lacking market demand or very low prices. It is estimated that in 2002 about 55 % of the population in the region of these forests and 44 % of the population nationwide lived below the poverty line (UN 2003).

The NTFPs collected in the walnut-fruit forests are used to cover subsistence needs and as a source of income. Poor households gain most of their NTFP-related income from selling walnuts. Some also make money from rose hips and wild apples, whereas only few households sell other NTFPs. They use the income gained from NTFPs primarily to satisfy basic needs. Only some poor households can additionally invest in other economic activities such as livestock rearing and into their social network (Schmidt 2005). A good walnut harvest allows a poor family to sustain a living for up to one year. However, walnuts are not a reliable source of revenue as there are, on average, only two to four good walnut harvests per decade (Müller & Sorg 2001).

Therefore, the economic importance of NTFPs for poor households varies considerably between years, as shown in Figure 5.

The potential of NTFPs to contribute to poverty alleviation in the walnut-fruit forests and critical issues can be summarised as follows using the three dimensions of the World Bank's poverty definition (World Bank 2001):

Opportunity
- NTFPs from the walnut-fruit forests and other forests in Kyrgyzstan clearly offer interesting income opportunities to local households.
- Poor households have at least some access to commercially valuable NTFPs, in particular to walnuts.
- There is a possibility to generate added value by processing NTFPs in local communities.

Security
- Wide yield fluctuations of walnuts and of some other commercially interesting NTFPs limit the role of NTFPs as safety nets for the poor.
- It is therefore critically important that poor households also have access to other sources of income than NTFPs in order to increase their livelihood security. In fact, people depending solely on NTFPs may become trapped in poverty.
- Market demand for NTFPs is increasing, both in terms of the number of products requested as well

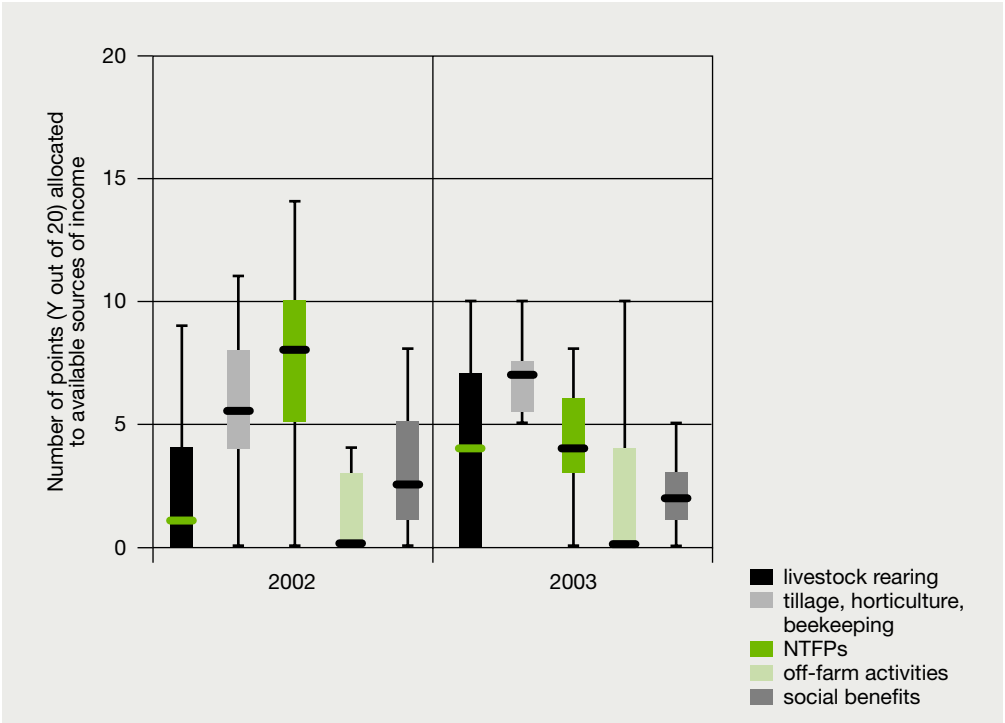

Figure 5: Relative importance of different sources of income and subsistence in 2002 (good walnut harvest) and 2003 (hardly any walnuts) for poor households; results of participatory scoring exercises; N 2002 = 30, N 2003 = 19.

A Kyrgyz farmer and his son bringing walnuts from their forest plot to the village (Photo by Kaspar Schmidt).

as their total volume. This might eventually reduce the dependency of poor households on walnuts.
– However, access to a given NTFP becomes more competitive with its increasing commercialisation. Under these circumstances the poor risk losing user rights, while powerful households tend to profit excessively.

Empowerment
– The allocation of user rights to NTFPs is often non transparent and there are tendencies in favour of rich, influential households. A deliberate focus on providing and guaranteeing access to NTFPs for the poor is therefore required to achieve poverty alleviation (Fisher et al. 2004).
– Kyrgyzstan has a national poverty reduction strategy to which the State Forest Service is also committed. However, this high-level policy has not yet been translated into concrete actions for the empowerment of the poor in the field. One of the reasons for this is that there is still little understanding of the social aspects of "sustainable forest management".

Thus, it can be concluded that NTFPs in the walnut-fruit forests can contribute to poverty alleviation provided that the institutional arrangements governing access to the products are reformed. This conclusion applies, to a certain extent, also to NTFPs from other types of forest in Kyrgyzstan.

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7 Shea Butter Tree Products: "The Savings Account of Sahelian Women"

By Jean-Marc Tendon, Mamadou Moustapha Diarra, François Picard, Cissé Djénéba Sow, Fogué Kouduahou & Amidou Ouattara

"Le Karité, l'or vert des femmes du Burkina" (a common saying in Burkina Faso)

1. Context and resource description

The shea butter tree occurs in the sparse dry savannah forests of the sahelo-sudanese zone of Africa. Several products of the tree have important uses, apart from shea butter which is extracted from the nuts. The fat content of the shea butter nuts ranges from 40 to 55 %, its extracted butter is traditionally used in cooking and 80 % of the population of both countries consume shea butter. It is also used as a fuel, for soap, candles and waterproofing, and the residues used as animal feed. It is used industrially in the manufacture of chocolate, lipstick and other cosmetics.

It is in the context of wishing to improve shea butter tree production and its contribution to rural livelihoods through value addition locally, that a project has been established in Burkina Faso and Mali by the Centre Ecologique Albert Schweizer (CEAS) and Intercooperation (IC).

2. Socio economic importance

Several aspects of the socio-cultural environment are an advantage for sustainable harvesting of shea butter nuts, traditional products having strong symbolic and social value in the region, and the nuts often being the traditional way of saving in village economies, particularly for women.

The harvesting and market chain, with its numerous layers (village, local, regional, national and international markets), remains "efficient" but does not sufficiently benefit women who are the actors at the base of the market chain. The annual turnover of shea butter marketed in Burkina Faso contributes 10 % of the GDP (and 25 % of the NTFP contribution to GDP). It is one of the most profitable products for traders. It is exported to most EU countries, to Asia and to the USA, where it is used in the food, cosmetics and pharmaceutical industries, as well as to neighbouring Senegal and the Ivory Coast.

Traditionally shea butter acted as a saving commodity for women. Due to the small market for home consumption and the low purchasing capacity of the local population, the development of the food industry also has to rely on its export capacity and potential. Before all value addition possibilities escape local populations, and particularly women, it would make sense to promote local enterprises which could increase employment and generate revenue in a way which is socially equitable.

The potential harvest in both countries from the existing tree resource is estimated to be more than double that is actually harvested. The aim of the project to promote local processing of shea butter into secondary products, and in particular cosmetic creams and soap for which the technology is well established, will enable real local needs to be increasingly satisfied while generating additional income for women.

3. The constraints

3.1 Resource constraints and other production aspects of the shea butter tree

The latest studies show a worrying ageing in the populations of shea butter trees in the whole region, insufficient regeneration, a significant reduction in tree density (due to cutting and natural death) and an high level of parasitic attack on the trees.

3.2 Organisational and marketing constraints

The quality of shea butter produced with traditional technology varies substantially. Further, the extraction rate is only 50 % of what can be achieved by more modern technologies. Hence, the large multinational companies, mainly in Europe and Japan, which dominate the international market, prefer to import raw shea butter nuts for extraction, thereby preventing value addition locally. Rural women sell their processed butter in local markets at rates which do not sufficiently compensate their arduous labour invested in the harvest and processing.

4. Objectives and strategic orientation

On the basis of the current status of the reflections of project partners and beneficiaries, the objectives and strategic orientations can be defined as follows:

Overall objective: through the establishment of independent shea butter product chains, but agreed upon according to negotiated commitments within a network of different professions, the competitiveness of local actors is strengthened, the value of the

Participatory technology development increases the potential for local processing. Here the example of the locally developed shea butter churn (Photo by Jean-Marc Tendon).

tree and its products is promoted and the species is protected.

Strategic orientations:

- Protection and regeneration of the resource (trees and agroforestry systems); apart from techniques enabling an improvement in the domestication of the species, agreed management mechanism of the agroforestry system need to be promoted at village and community levels.
- Quality control of collection and storage of nuts and kernels.
- Optimisation of the shea butter production process and its conservation, promotion of markets for quality kernels.
- Promotion of shea based products with appropriate technology, including improvement of the quality and packaging of derived products and value addition of processing residues.
- Strengthening of the organisational and financial capacity of the stakeholders through the promotion of dialogue amongst the actors of the product chain.

5. Activities – Progress to date

Training

Training and capacity building have been undertaken by CEAS for over 900 women from Burkina and Mali on three major topics:

- Collection techniques, product treatment and butter extraction in both workshops and the field.
- Soap manufacturing techniques.
- Group formation for management, marketing and commercialisation of shea butter and its by-products. Participatory studies concerning needs and constraints for the establishment of an organic product market chain.

Research and development

R and D in order to reduce labour and energy consumption, to improve and/or ensure product quality, to promote marketing and to improve the tree population density and production potential has already produced the first results:

- Technologies for improved soap production have been developed.
- An improved shea butter churn has been developed and operates with an extraction yield of 40 to 45 % compared to a maximum 27 % yield with traditional manual methods.
- Establishment of operational premises in Ouagadougou for R and D in cosmetics.
- Technology and new product development.
- Concerning product promotion and marketing, research has been undertaken at several trade fairs by the groups initiated by the project, and several international product outlets have been identified.
- The earlier studies indicating reduced tree populations and shea butter nut production have been confirmed, and a better understanding is emerging of the factors responsible for these reductions. Research conducted under the aegis of the project show that, to overcome the significant difficulties in productive tree propagation in nurseries due to the long period before fruiting, grafting of more productive individuals is promising. Mechanical parasite control has also been found to be feasible and practical.

6. Conclusions and prospects

Traditional production system: Given the laboriousness of shea butter related work, would it not be appropriate to undertake gender sensitisation, in order to free the time required by women for quality and volume production?

Problems concerning local/national processing: What products for which consumers? Analysis of the whole market chain; procedures and conditions for access to international markets. Which technology for competitive products?

Value addition for by-products: What is the potential for cake, pulp and other products from the tree?

Quality norms – Fair trade – Organic label certification: Do national and international quality norms exist for shea butter products? Who defines them? What are the certification procedures? Do capacities exist at national level for doing so?
In the cosmetics sector, many companies express their interest for fair trade shea butter. Due to the low volume available on the market, and its total absence for refined butter, these companies have to purchase the butter from food industry multinationals. By getting involved in fair trade for cosmetics, there would be no competition with these big companies since the potential market involves only 1 % of their required volume. What are the possibilities for benefiting women's groups from these opportunities?

To enable women to maintain their crucial and traditional role in shea butter collection and processing, technical innovations need to be introduced for value addition for local and specialised (organic, fair trade) markets. Will the conditions necessary for organic product labelling allow for sufficient profitability in the shea butter market chain?

Charter of professionals of shea butter: To bring women's groups into a federation and to guarantee the quality of all the products, a charter of shea butter professionals will be established, as requested by beneficiaries groups. The product label, which should emerge from this process, will guarantee humane work conditions and respect for the environment.

8 Certification and Labelling: Opportunities for Non-Timber Forest Products

By Heini Conrad

Due to the market success of many certified organic and fair-trade products in different countries, there has been a growing interest in recent years in certification and labelling to be expanded to more product sectors. In the forestry sector also, a discussion and experiments to assess the possible positive impact and sustainability of the use of certification and eco-labelling have started.

Most of the existing certification and labelling schemes focus on different aspects of sustainability in their standards. It appears that from the introduced schemes focusing on ecological, social and economic issues, the following might be of interest for the NTFP sector:

- FSC (Forest Stewardship Council) for the ecological practices with forest products including NTFPs.
- IFOAM (International Federation of Organic Agriculture Movements) with their guidelines for wild harvested products.
- FLO (Fair-trade Labelling Organization International) with their socio-economic approach to relevant products for small farmers' communities.

In order to judge the feasibility of NTFP certification, some of the minimal requirements valid for all certification schemes need to be considered:

- **Accountable and controllable standards accepted by the sector**
  The complexity of social, ecological and marketing issues raised by NTFPs requires a wide approach; on the other hand the standards and guidelines need to have a clear focus (and simple message) and be as practical (and measurable) as possible and understandable to all actors. Otherwise the system becomes too complicated and too expensive.
- **Minimal organisation of primary producers and transparent chain of custody**
  Certification requires a tracking system to ensure that products offered come from certified sources and are not mixed with non-certified sources on their way to the market. This requires a high level of organization, especially at the primary level, and the organisation of small holders and their capacity to keep a minimal administrative infrastructure is critical. Also, all other actors in marketing and transformation along the value chain of the product need to agree on the required transparency of all transactions of certified products and to keep records of the required data.
- **Third party inspection and clear monitoring procedures**
  Increasingly, companies claim to act in an environmentally and socially responsible way. Only independent third party certification can ensure accountability and alleviate consumer confusion and reward correct management.
- **Credibility and markets**
  Certification is a market-based tool. It is valuable only in cases where traders and consumers are receptive to the objectives promoted through a label. The main market opportunities are found in countries where the credibility of the label holder is essential for the market acceptance of any certification and for their impact on improved market access.
- **Volume**
  The size and scale of an operation determine the access possibility to certification. All added costs of certification should be covered through market prices. This means that traders, and at the end consumers, will need to pay more for a certified product in order to make certification economically viable.

Not many NTFPs can actually fulfil the above mentioned requirements. Although the total market value for NTFPs is estimated in billions of dollars, a closer look into trade chains and markets reveals a market subdivided into many products and in very different, specialized and small markets. This drastically reduces the opportunities which certification may give to NTFPs. The best potential for NTFPs are a well-organized producer background, a transparent chain of custody, a considerable volume of trade and a market demand linked to a widely recognized certification and label. Some products that might have these features are: Brazilian nut, shea butter, palm heart, chicle and some medical plants. The best-known credible label in Europe that is related to NTFPs is undoubtedly the FSC label.

The Rainforest Alliance's NTFP Marketing and Management Project (Shanley et al. 2002) which explored the feasibility of NTFP certification affirms in the lessons learned so far that:

- **Certification can help market value-added products**
  It was shown that market positions can be improved by increasing value, and not volume, by tapping premium prices as a result of certification.
- **Opportunities may lie within existing market and products**
  Certified NTFPs that reach socially and environmentally conscious consumers may enjoy increased market access and market shares.
- **Certification can appeal to certain niche markets**
  The successful marketing of certified NTFPs is likely to identify possible markets, companies, communities and consumer groups willing to purchase environmentally friendly and fair products.

These lessons underline the need to identify and assess opportunities for certification of NTFPs from the market side. Whenever possible it should be through existing commercial demand rather than by trying to build up new markets. It is about matching an increasing consumer awareness with producer needs; finding the trade partners willing to work in a framework that can give, equally to consumers and producers, guarantees for environmentally sound and fair trade.

Reference:

Shanley P.; Pierce A.R.; Laird S.A.; Guillén A. 2002: Tapping the green market: certification and management of non-timber forest products. Earthscan publications. London.

9 International Marketing of NTFPs

By Susann Reiner

With only a few exceptions, international markets for NTFPs are niche markets. This, however, also matches the character of most NTFPs, as hardly any of them have the potential to feed into large markets without thus threatening sustainable resource management.

The trade sectors that the 'Regenwaldladen' (a major project of the Rainforest Institute in Germany) accesses concerning NTFPs are also currently the main trade sectors for NTFPs in general.

These are:

(a) The fair trade and organic markets, with the main requirements of these sectors being that the products are produced in a socially correct and environmentally friendly way and that they meet organic standards. In general NTFPs should meet the organic standard without any problem, as they are often grown wild or in a semi-domesticated way without any treatment.

(b) The 'eco' market, which requires that products are environmentally friendly and free from pollutants. In this sector, NTFPs can provide alternatives to conventional products, such as children's rainwear made from natural rubber impregnated fabric as a substitute for the often highly contaminated conventional rainwear. This sector provides good opportunities for the innovative development of NTFP derived products and for increased value addition.

(c) The 'speciality' markets, where products serve special purposes or applications such as health food, supplements and wellness products.

The characteristic features of the above mentioned trade sectors are that in all cases:

- Markets are relatively small, so they match the capacity of the more widely occurring NTFPs.
- Trade chains are short, thus enabling fair price calculations for all parties involved and also facilitating communication between the consumer and the producer. The feedback can then speed up improvement and further development of the relevant products and production methods.

For successful international marketing of NTFPs, it is essential to provide substantial general information on the products, production processes and in some cases also on producers, as unlike with most other traded goods, little tends to be known about NTFPs above a regional level. Particularly, the fair trade market sector also requires general transparency concerning production and marketing for the whole chain from the forest to the consumer.

In order to access international markets, it is also essential for the producers to have a high level of organisation and clear access rights. Only when these conditions are met, long-term co-operation at an international level is possible, ensuring also the sustained availability of the relevant NTFPs.

In addition, producers benefit greatly when NTFPs are locally processed for added value, as this brings a whole range of advantages to the producer community, e.g. higher earnings, concomitant local capacity building in processing techniques, diversification of occupations which then might bring about a genuine development incentive from within the community and based on the resources available to the community, which supposedly leads to higher value addition. Such genuine local development can then help to support regional identity building, and eventually also reduces pressure on the forest.

10 NTFPs and Development: Elements of Synthesis

By Jean-Laurent Pfund & Patrick Robinson

The aim of the workshop was to "clarify the potential role of Non-Timber Forest Products in poverty reduction strategies". The day's evaluation by the audience highlighted two types of participants and correspondingly different degrees of satisfaction: some "high-level" specialists were slightly disappointed by the lack of "new findings", whereas students and generalists were very pleased with the information provided, the "state of the art". Based on the speakers' contributions, we try here to synthesize what we feel are key elements of this "state of the art", even if it remains very risky to try to generalize in the domain of NTFPs.

The wide variety of species, harvested plant parts, products, collectors and community characteristics, socio-cultural conditions, trade chain characteristics, and marketing situations in producer and destination countries makes it very difficult to draw general conclusions about NTFPs, especially on recommendations for equitable benefit distribution between the different parties involved. **What the workshop has achieved is to help highlight a number of key issues around a number of important themes which must be considered carefully when embarking on NTFP related development support.** On the basis of these, it should be easier at least to ask the right questions, and frame them in the appropriate thematic context, so that appropriate interventions can be developed to concretely tackle together poverty reduction and biodiversity and natural resource conservation. NTFPs may not be the generalised El Dorado which some people had hoped for, but given certain conditions they can indeed make a substantial and sustainable difference to the lives of the poor – if the right interventions are designed so that they do not remain the often unsustainable El Dorado of the few.

NTFPs as safety nets

- The traditional and still crucial role of NTFPs in rural and remote areas is their numerous uses for **subsistence purposes**. Over and above their regular use, they also act as safety nets as they provide products and even **extra income helping to overcome bad years** or events and to limit unexpected resource shortages *(Ruiz Pérez this volume)*.
- The conflicting aspect of this reliance is that forests provide assets useful for the poorest but that, **in many cases, deforestation for agriculture or for livestock husbandry can be perceived as a more efficient way to reduce poverty** – as long as the poor have titles and control over the cleared forest lands, and that the new agriculture and livestock production systems are sustainable (e.g. that soil fertility can be maintained). In some cases, incomes from NTFPs might be used for investing in unsustainable activities *(Ruiz Pérez this volume)*, but as highlighted for Kyrgyzstan *(Schmidt this volume)*, poor households use the NTFP derived income for basic needs and only few can invest in other economic activities such as livestock rearing or in their social network.
- Nevertheless, NTFPs' role in "mitigating poverty" for the poorest remains vital. According to the WHO, 80 % of the population of developing countries use NTFPs for health and nutritional needs (*Ndoye this volume,* WHO 2003). Accordingly, **equitable access to forest resources by local people must be a priority for decision-makers and land-use planners**. Unfortunately, existing policy frameworks sometimes prevent this essential contribution of NTFPs, especially where the overriding perceived commercial function is that of timber and is the only one taken into account in national policies *(Michon this volume)*.

NTFP markets in the "bigger picture"

- NTFP markets are very diverse and generally specialized. They can be international "big businesses", for instance for some medicinal plants, or they can remain important locally or regionally. **Concerning the contribution of NTFPs to forest people's livelihoods, the twin questions raised are "how much" and "who benefits"** *(Ruiz Pérez this volume)*. For poverty reduction, it may be judicious to support the NTFP dependent poor to improve their potential for increasing their earnings sustainably through adequate interventions at the level of easily accessible local-regional markets, be they urban or rural.
- Even if the challenges for improving revenues to local people from NTFPs which could be or are already traded internationally are very considerable, **some experiences to date indicate that the potential benefits may be large**. For those which are already traded, the key issues are local value addition through increasing processing locally, and in local people being able to bargain for better prices in various ways, including being pro-active in accessing directly the markets higher up the market chain. For those which clearly have a potential to be traded internationally, **the range of issues which will have to be tackled over the years to access "globalised" markets can contribute to essential learning** even if these are limited to few products, limited quantities or often unprocessed products.

- With regard to the location of the processing activities, Germany, ranked third worldwide as an importer of medicinal plants and also third as a (re)exporter of processed products (and with the most reliable data on NTFP trade amongst the big trader nations), provides interesting insights: it imported 849 species in 1992 from the temperate Asian region alone (other imports were of 343 species from Africa, 318 from Tropical Asia and 207 from South America), but most of which were processed in Germany (Lange & Schippmann 1997). **This shows the potential there is for value addition locally**.
- Not only the markets, but also the nature of the products and their processing have to be carefully differentiated. For instance, **value per unit weight of the raw product and processing characteristics are key determinants** in assessing the potential for a product to be economically viable for different markets. In addition, the location where the harvested product can be processed and **the distances** over which the product has to be transported will **influence its competitiveness** and determine how close to the production site it has to be processed to remain competitive, and how far it can be traded beyond local markets and right through to international levels. Finally, the "shelf life" of the harvested, processed and marketed components also has to be considered – amongst other characteristics – in any business analysis.
- The "free" access to the "minor" products and the sometimes correspondingly high demand (European and American pharmaceutical companies are increasingly importing NTFPs from Africa, *Ndoye this volume*) have in several cases led to **opaque market chains and international trade**. The underlying reasons for non-transparent market chains are several: the business advantages of keeping trade and product processing secrets, tax evasion, cam-

Orchids are often sold near humid forests by local dwellers. How long will the resource last and sustain a trade to contribute to people's livelihoods is of course also a key question in the context of poverty reduction (Photo by Brian Belcher).

ouflaging trade in protected species, etc. The difficulty to monitor and control NTFP flows and trade increases with the degree of processing of the sold product.

NTFP markets and rural people's strategies

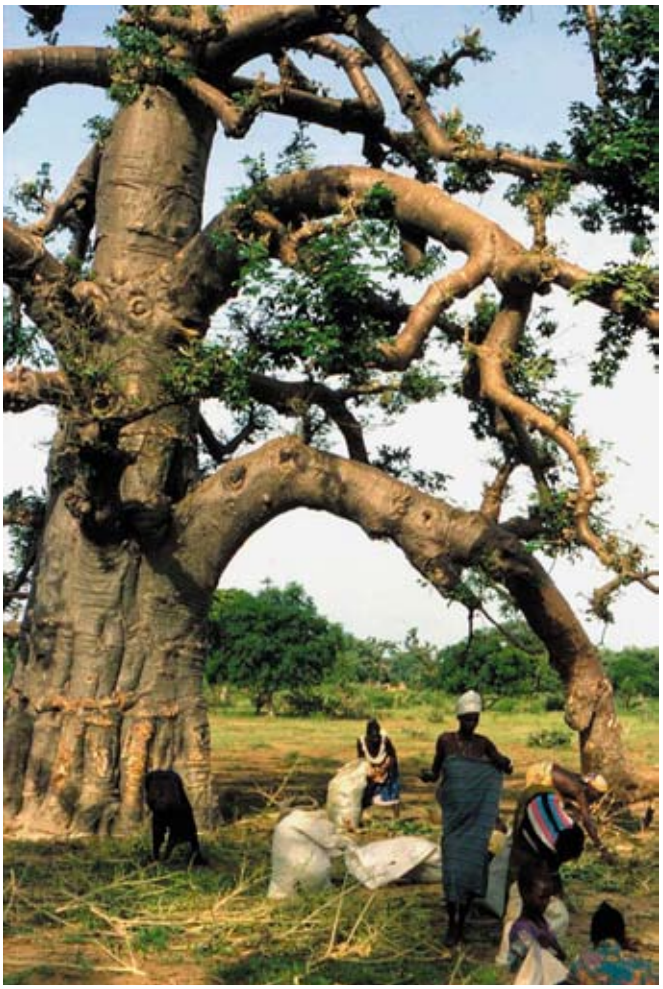
- Having analysed several case studies, CIFOR's researchers have distinguished two livelihood strategies related to NTFPs **besides their "safety net" role: "mixed" and "specialized" strategies** *(Ruiz Pérez this volume)*. The differences between these two strategies are crucial in terms of households' livelihood potential and may occur in the same location and for the same product. The mixed strategy integrates NTFP harvesting or production in its overall farming strategy, whereas the specialized strategy is a main driver of overall household production and earnings. In the latter case, investment levels (e.g. at production level such as domestication processes, in quality control and in marketing) are usually considerably higher than in the "mixed" strategy category.
- Even in existing markets, one of the recurrent poverty-related issues remains: **very low returns are usually obtained by producers/harvesters in comparison to those of intermediaries and trading specialists**. Locally, benefits are much higher for "rich" households and for skillful outsiders (Chakrabarti & Varshney 2001 for India, Smith Olsen & Helles 1997 for Nepal). This inequitable benefit sharing often increases in the case of species/products which are protected by law: for instance in Nepal, while benefit shares in non restricted herbs are overall 11 %, 43 % and 12 % for primary collectors, local traders and export traders respectively, **for restricted species** the benefit sharing is 7 %, 22 % and 52 % respectively showing clearly that in the latter case **it is the outside export traders which increase their benefit substantially to the detriment of local people** (Karki et al. 2003). Nevertheless, commercialization of NTFPs enables rural dwellers and poor urban households to diversify their source of income *(Ndoye this volume)*.
- **NTFPs are often of particular importance to women, but the context can lead to radically different situations for them.** In situations where women are the traditional harvesters/producers of NTFPs and sometimes of their processed products, the case in much of sub-Sahara Africa and especially for food and medicinal products *(Ndoye, Tendon et al. this volume)*, they may be able to use their skills and knowledge to improve their status and increase their contribution to decision-making processes. Conversely, where women are involved in NTFP harvesting because the returns are too low to attract men, or because they have taken over what used to be men's work but these have out migrated for better earnings, their involvement with NTFPs may not help in any way to contribute to their economic and political emancipation. **In the worst cases, women may even become excluded from their traditional role in NTFPs** because rights and/or benefits are captured by men in case of increasingly interesting benefits.
- In addition to the specificity of products and markets *(Ndoye, Michon this volume)*, the social context logically adds some complexity to the understanding of NTFPs' production and marketing. **In rapidly expanding NTFP markets and for NTFPs which are "radically market-oriented", the impact on equitable benefit sharing and poverty reduction is generally negative** and also generally negative by reinforcing the poors' lack of influence on politics and policy debate *(Ruiz Pérez this volume)*. Market information plays a core role and outsiders, who control information, therefore develop relatively more importance and power.
- In decentralized processes with low local accountability and poor governance, **if NTFP production is domesticated, the landless/poor people** who traditionally collected from the wild (perhaps along sustainable harvesting principles) **have a strong risk of being excluded**.

NTFP harvesting and resource conservation

- The safety net as well as the income-generation role of NTFPs is known from several areas of the world to be in jeopardy as NTFP resources, at least for **some important species, are fast depleting** (Chakrabarti & Varshney *op. cit.* for India): the vicious circle of increased poverty, with reduced bargaining capacity by collectors, can lead to an increase in unsustainable harvesting intensities as collectors require to harvest more to obtain the same income. With the lowered harvesting efficiency, due to the reduced resource, the income per unit amount harvested is even more reduced.
- In general, NTFP management remains a highly unpredictable occupation for local forest-dependent communities *(Michon this volume)*. For NTFPs to be harvested sustainably, a number of key factors need to be combined. Firstly, the capacity for any NTFP population **to withstand harvesting depends on the plant part which is harvested** (e.g. bark, root, tuber, leaves, sap, fruits, flower), the harvesting intensity, frequency and timing in relation to annual phenological development, and therefore

on the species' reproductive and/or regrowth capacity. **Generally, local people have detailed knowledge of these aspects.** Secondly, the actual harvesting intensity, frequency and timing must be according to the species' capacity to reproduce/regrow, and this is highly dependent on the interest and effective possibility of the harvesters to restrict harvesting intensity to levels which do not hamper long term sustainability. Thirdly, the ecological requirements of the NTFP species need to be optimally maintained, e.g. if shade is required and the surrounding forest is harvested for timber, then irrespective of the care which local harvesters may give to appropriate harvesting intensity of the NTFP, the deteriorating ecological conditions will not allow the species to develop or reproduce. For all these aspects, **traditionally developed harvesting rules** often exist. These **have to be respected and integrated in any development of new regulatory regimes.**

- If there is a **need for developing NTFP resource specific inventories and monitoring schemes**, one should remember that forest inventory techniques have been developed for timber and are largely irrelevant for most NTFPs. "Scientific" solutions are to be found more in complex plant ecology methodologies which have only been applied to few NTFP situations so far, because of their very high cost to meaningful result ratio. Further, local people need to be able to apply the inventory and monitoring techniques if these are to contribute to their decisions over harvesting intensity. Local traditional harvesters have often developed their own indicators to assess the sustainable harvesting potential of an NTFP population, and any new methodology should consider these carefully and probably **combine traditional knowledge and more modern scientific methods** (Baker 2001, NSCFP 2001, Paudel et al. 2002, Wong 2000).
- Examples of NTFP overexploitation are numerous and correspond to classic examples of natural resource depletion. In some forest areas, **professional collectors from outside deliberately ignore local rules and can apply the "harvest-exhaust-move" strategy** *(Michon this volume* and increasingly the case with NTFPs in India Chakrabarti & Varshney *op. cit.*). The famous Kuznets' curve and many other schematic depletion trends in natural resource management highlight the risks of overexploitation by harvesting wild resources before interest develops in initiating intensive management. In the case of many NTFPs, their disappearance provokes less public response internationally than for fauna or timber species. At local level, however, and particularly with increased empowerment and the development of community forest management, there are numerous **recent examples of local people managing to prevent outside traders and collectors from entering NTFP areas**.



Traditional knowledge should be the initial basis for designing sustainable production schemes but it does not mean that scientific research is not needed for some important species (shown here a baobab) (Photo by Jean-Pierre Sorg).

NTFPs and certification

- Certification schemes have been much debated for timber products but do have some positive impacts in European markets especially through lobbying activities of NGOs such as WWF for the FSC label. For the time being, much more timber is certified in developed countries because of the **high transaction costs** and other requirements involved with certification. In such a context, the search for sus-

tainably produced products has been more important than its real impact on poverty reduction.

- Other labels target fair-trade mechanisms more than organic and sustainable criteria. Not many NTFPs can currently fulfil the requirements. **The best potential for NTFPs is with well-organized producer backgrounds, a transparent chain of custody, a considerable volume of trade and a market demand linked to a widely recognized certification and label** *(Conrad this volume)*. Some products that might have these features are: Brazil nut, shea butter, palm heart, chicle and some medicinal, aromatic and specialised food plants.
- Opportunities for certification of NTFPs exist and can appeal to certain **niche markets**, even if the expected benefits should be carefully identified and assessed from the market side, and benefit sharing processes from the policy side. The information on products which may be attractive for "responsible" consumers is central for the assessment. The different labels must highlight the **specificity that appeals to the customer**. Even if the added-value for producers is not assured in each case, labelling can bring more regularity in demand over time and can help producers to adapt their production and to conform more easily to the expected quality and other requirements.

NTFPs and regulatory frameworks

- As they have often been considered as "minor" products, access regulations to NTFPs are generally more clearly embedded in the **customary rights** than in specific "modern" and often highly regulated external management and control mechanisms *(Michon this volume)*, except for some of the most important NTFPs. In forest-rich countries, where logging is of central importance, NTFPs are neglected except if concession holders can easily market them. In forest-poorer countries, competition for different land uses can also lead to a poor consideration of NTFPs' production potential. Despite the safety net role of NTFPs, forests are often perceived as a land reserve or available resource, even or especially for poor farmers.
- In this context, **access to land and resource use regulations are the basic parameters that determine the type of resource management and the benefits rights**, which can be expected from the outset. Regulations may potentially have a positive impact if the use and management rights are given to rural poor and if, as a result, interest and commitment in conservation measures develop. Unfortunately, in many cases, high economic interest for timber or for intensive agriculture or livestock development may lead to a further inequitable distribution of rights in favour of external and better off investors, resulting in **negative impacts** on forests and on the long term situation of the poor, **unless radical and pro-poor changes are introduced at policy level and effectively implemented**.
- Ultimately, access and management regulations must reconcile the often "top-down" land development planning with local and sometimes sophisticated **customary rules**. The latter "naturally" **take into account the multifunctionality of forests** whereas land use planning can have the tendency to consider one priority function for one space unit. Several examples and *Michon (this volume)* demonstrate however that traditional local forest managers normally try to "domesticate" the wild production of some NTFPs either in conjunction with other forest activities or with other farming activities (agroforestry).
- In the case of **intensive domestication processes**, e.g. cultivation of a forest species in agricultural fields or agroforestry systems, **many technical, economic and social aspects should be known and considered before embarking on this option**. First of all, the effect on product quality of growing the NTFP in a different ecological environment must be assessed. Secondly there may be product quality variability which is determined by inherent genetic variability in the NTFP wild populations. In such cases, it is crucial to ensure that the appropriate selection of planting material is made and for some NTFP products, such as medicinal, this would require substantial research, although again some traditional knowledge exists even on this aspect. Further, the transition from wild harvested to cultivated products may radically alter the balance of advantages/disadvantages between different beneficiaries of the markets. While landless people may have taken advantage of the growing commercialisation of a NTFP, they may become the first victims of an intensive domestication process usually led by solid outside investors. Lange & Schippmann *op. cit.* recognised that for medicinal plants, it may not yet be economically viable to cultivate the majority of the species. Interestingly, German drug traders' knowledge on the percentage of their imported products originating from cultivation and from the wild varied from "80 % from cultivation" to "90 % from the wild", the reason being that they do not know the provenance of the purchased drug (seldom are certificates of origin required). These authors estimated that on average 70 % Germany's traded medicinal drugs are collected from the wild and 30 % grown in cultivation.

- Based on a **basic, concrete and effective recognition of the rights of local populations**, modern regulations will have to consider forests and forest products
  i. in a **landscape perspective**, i.e. considering the **farming system as a whole** and the multiple functions of forested ecosystems, and
  ii. within an approach ensuring the **livelihoods of each social group**.
  In the process of developing such policies, NTFPs can be used to highlight the diversity and the importance of forest product uses and marketing for poor people and to ensure that customary uses/rights can be incorporated in the new regulations (Paudel et al. 2002), or alternatively that equitable compensation could be provided for lost access and rights.

NTFPs and international trade negotiations

This section was not thoroughly discussed during the meeting. However, the authors wanted to complete the elements presented on the regulatory frameworks by some short information on the **"Trade-Related Aspects of Intellectual Property Rights"** which are currently still much debated at the international level.

- In each single location, NTFP management is affected simultaneously by local, national and international regulations. Observations show that these regulations are often contradictory, or incompatible, and that this **accumulation of regulations is totally counterproductive**. For more benefits to be obtained by local forest-dependent communities, it is urgent to re-examine the relevancy of each type of regulation, and the compatibility between the different policies, laws and regulations at the different levels *(Michon this volume)*.
- **Information sharing is particularly complex** when the exchanges occur at the international level and have natural products as object. The link between NTFP development and biodiversity conservation/equity was already debated in relation to extractive reserves more than 20 years ago. Activists and others argued bitterly over the wisdom of this course, those against arguing that drawing poor people even closer into market relations would only lead to their further long-term impoverishment, while diverting scarce resources from the struggle for land and other fundamental rights (Forte 1999).
- The 'South' argued in the TRIPs (Trade-related Aspects of Intellectual Property Rights) negotiations that intellectual property rights were not a trade issue at all and were already covered by an existing UN organisation, the World Intellectual Property Organisation (WIPO). However **key Northern interests** were able to shift Intellectual Property Rights (IPRs) negotiations to the General Agreement on Tariffs and Trade (GATT), which led to the establishment of the **World Trade Organisation** (Forte 1999).
- In 2003 during the 18th Global Biodiversity Forum, participants from a broad range of interest groups discussed the link between the WTO's Trade-Related Aspects of Intellectual Property Rights (TRIPs) Agreement and the Convention on Biodiversity (CBD). **They called for the protection of traditional knowledge and biological and cultural diversity in the face of trade liberalisation.** There was general agreement that irrespective of whether patents over life forms are allowed, disclosure of the origin of genetic resources and traditional knowledge should be required. This could be addressed for instance in the ongoing review of TRIPs Agreement, where participants also noted that the link between IPRs and human rights should be explored (ICTSD reporting 2003).
- At the WTO Council for Trade-related Aspects of Intellectual Property Rights (TRIPS) in October 2005, discussions on **disclosure of the source of biological materials and related traditional knowledge in patent applications** once again saw countries, especially USA and India, clash on whether such a patent-based system was indeed necessary to ensure the equitable sharing of benefits from genetic resources (ICTSD reporting 2005).

NTFPs in Oversea Development Agency (ODA) interventions

Emphasize site-specific information

- **Context specific information is necessary** to evaluate the potential of NTFPs' harvesting and commercialisation, and to understand their economic returns according to the different social groups, especially women and poor segments of the population. Even if generalizations are difficult to make on the basis of different geographical areas, socio-cultural environments and products, **ODA participatory interventions can provide site-specific and up-to-date information** to market and policy specialists on NTFPs' roles and resources based on local conditions. They can also **facilitate the search for realistic and equitable trade-offs in terms of regulations between local and official levels**.
- **Maintaining and monitoring sustainability** still needs substantial further work in the case of

NTFP harvesting. Simple evaluation techniques are needed but inventory methods are to be developed, where possible based on validated traditional knowledge, for the different types of NTFPs and locally adapted for adoption as user based self-inventories. The need for better basic information is so great that some **action research**, with or without research partners, should be developed by ODA programmes if NTFPs are part of households' assets and strategies. Some research findings have been shown by the authors *(Ruiz Pérez, Schmidt this volume)*, and the role of **"participative innovation development"** was especially highlighted (*Felber this volume*, and see also work on locally developed inventory guidelines in Nepal, NSCFP 2001).

Local populations do not always deal with "social matters" as perfectly as one could imagine. Pictured is the case of an old Nepalese woman carrying a heavy fodder charge (Photo by Christian Küchli).

Ensure social cohesion and access to benefits for poor populations

- **Effective local organizations** are seen as a basis for sustainable management of forest products and of its control. However, many local regulations are aimed at strengthening the social and political position of community elites *(Michon this volume)*. Consequently, poverty alleviation generally requires **focused development interventions/ initiatives for poor segments of the populations** (examples of shea butter in Sahel, walnuts in Kyrgyzstan and other NTFPs in Vietnam and Nepal *(Tendon et al., Schmidt, Felber this volume,* Karli et al. *op. cit.,* Paudel et al. *op. cit.* for Nepal). The tradeoffs between private gains and social costs of resource depletion should be explained to communities *(Ndoye this volume)*.
- Especially in the case of lucrative market chains, the returns given to producers are very low and outsiders and non-traditional collectors can take advantage either of better access to market information or to investment means (money but sometimes also management rights). Such frequent situations represent threats to sustainability and to local livelihoods. **ODA can promote empowerment and "community forestry" strategies/modalities of forest management** where such possibilities exist and/or develop participatory community natural resource use rights in targeting equitable solutions for poor people *(Michon this volume,* Karki et al. *op. cit.)*. In any case, **policies aimed at reforming existing trade chains must be developed very carefully,** because the common assumption that "middlemen" exploit local collectors or traders is not necessarily always true *(Michon this volume)*.
- Where land use is influenced by major agricultural or forest products (cotton, oil palm, etc.), the pressure for forest land conversion can be so high that the prospects for forest conservation are in any case doomed without strong and effective political will to counteract these pressures. In such complex situations, **State regulation and control as well as innovative collaborative partnerships between communities, authorities and the private sector are all needed**. Consequently, *Ndoye (this volume)* proposes to stimulate cost-effective

small-scale forest enterprises and *Michon (this volume)* mentions that balanced systems must be sought more systematically between local people, legitimate outsiders, concessionaires and national authorities.

- To sum up, the **social contributions of NTFPs and their potential for the poor need to be better integrated in crucial policies at national level**. The elements to consider in priority at the policy level are:
  - Equitable access to resources and to benefits.
  - Regulation modalities, local accountability and transparency of markets (no "informal taxes", *Ndoye this volume*).
  - Simplification of procedures (administrative, legal, financial).
  - Differentiation of the existing forest types and managed landscapes and analysis of the specific resource/product potential according to the various expected functions to be ensured by forests and trees.
  - Focus on adaptive local governance processes based on the usually flexible customary rules *(Michon this volume)* and on collaborative networks rather than on "perfect" State or market regulations.

Ensure capacity building, facilitate trade associations and links to known/transparent market chain

- **Market information** is obviously a **core element of the "power games"** characterizing both traditionally valuable markets and those which are expanding/developing. The provision of valid and targeted market information contributes to the empowerment of local producers and traders as is illustrated by many examples *(Ndoye, Felber, this volume,* Karki et al. *op. cit.,* Paudel et al. *op. cit.* for Nepal).
- With sharing and analysing market information as well as with product grouping and resulting improved price negotiation capacity, **interest group associations or federations are in a better bargaining position** with traders and the policy-makers. Producer associations and federations can even be seen as future "substitutes" for ODA stakeholders if they keep a strong link with the local harvesters and trader groups or co-operatives (Karki et al. *op. cit.*).
- Ideally, ODA and/or associations could support the **local harvesting/processing/small trader groups**, in addition to market information, in the domain of micro-credit (to avoid risks due to known fluctuating yields and prices) and even with investment in local processing. Facilitating systems of **micro-credit** could help alleviate the chronic spiral of poverty of local collectors and increase their bargaining power *(Michon this volume)*. Alternatively ODA could promote **enterprise promotion through collaborative arrangements and public-private partnerships** between existing industries and local producer groups and their federations (Karki et al. *op. cit.*).
- Commercial interests may be small for many NTFPs, but some have considerable value (some medicinal plants) and others are important niche markets. **Local processing or part processing** is the most effective way to add value in the least developed countries and ODAs may study the possibilities for national policies to enable incentives for facilitating such investments. For instance, *Felber (this volume)* mentions promising local initiatives from Vietnam such as broom and hat production. In other cases, ODAs can have a very substantial role in **breaking the opaqueness of the market** and providing better information through backward and forward linkages. This is made much easier where the product is purchased in the ODA's country. Labelling, certification and even products which are promoted but have an unofficially recognized identity can also be attractive and provide appropriate information to enable consumers to act in a "socially and environmentally responsible" manner which can then be reflected in higher prices lower down the market chain.
- Finally, **aspects of marketing** are not only important in terms of customer information but also in terms of commercial benefits *(Reiner this volume)*. For export products, a professional approach and modern advertising techniques are needed to remain in line with other commodities, even, or especially if, they come from a "least developed" environment. For specific products and markets chains, ODA programmes can use some NTFPs as examples of product commercialisation so that the commercial capacities gained with the product can be used for other marketing activities.

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Annexe 1:
Programme of the Workshop

Program NTFP Workshop, January 31st 2005 – Bern

Between market forces and poverty alleviation. The contribution of Non-Timber-Forest Products

Chairmanship: Martin Sommer (SDC), Daniel Birchmeier (seco), Laurence von Schulthess (SDC)
Morning moderation: Christian Küchli
Afternoon moderation: Jean-Pierre Sorg

		Speaker	Topics of presentations
09.00	**Introduction**	**Martin Sommer** **Daniel Birchmeier**	
09.15	**NTFP & Poverty**	**Manuel Ruiz-Pérez** CIFOR-Spain	'Global patterns and households strategies', NTFP definitions, global patterns and trends, esp. NTFP in the households strategies
09.45	**Questions** (clarif.)		
10.00	Break		
10.30	**Market forces & NTFP**	**Ousseynou Ndoye** CIFOR-Cameroon	'Commercial issues', markets and trade issues, trade organisation and development
10.50	**Questions** (clarif.)		
11.00	**NTFP & Policy**	**Geneviève Michon** IRD-France	'Policy and regulations', regulatory framework, policy and development, including traditional knowledge
11.20	**Questions** (clarif.)		
11.30	**Discussion**		
12.15	Lunch		
13.15	**Roundtable: presentations**	**Kaspar Schmidt** ETHZ/University of Reading, UK **Ruedi Felber** NADEL, ex-Helvetas **Jean-Marc Tendon,** CEAS **Heini Conrad,** IC **Susann Reiner** Regenwaldladen	'Field conditions' Kyrgyzstan 'Field conditions' Vietnam Chain of custody Karité Mali Labelling Bio/Fair/Organic markets Marketing – NTFP
13.45	**Roundtable: discussion**		
14.30	Break		
15.00	**Plenary discussion**		
16.00	**Synthesis**	**Jean-Laurent Pfund,** IC	
16.15	**Closure**	**Laurence von Schulthess/** **Daniel Birchmeier**	

Annexe 2:
List of participants

Name	Organisation	Communication
Auer Luzius	Geosystem SA	Phone: +41 21 886 22 30. E-Mail: luzius@geosystem.ch
Birchmeier Daniel	seco	Phone: +41 31 324 09 14 E-Mail: daniel.birchmeier@seco.admin.ch
Bloesch Urs	Consultant	Phone: +41 32 341 63 27 E-Mail: bloesch@swissonline.ch
Borner Monica	WWF Switzerland	Phone: +41 1 297 22 32 E-Mail: monica.borner@wwf.ch
Bratschi Dieter	NTFP Foundation Bern	Phone: +41 76 320 92 96 E-Mail: djbratschi@bluewin.ch
Bretscher Adrian	SIPPO	Phone: +41 44 365 54 62 E-Mail: abretscher@sippo.ch
Bukobero Sajad	IUED	Phone: +41 76 405 90 20 E-Mail: bukobero@etu.unige.ch
Caminada Leo	Caminada & Partner BACO AG	Phone: +41 41 852 07 07 E-Mail: caminada@cp-air.ch
Conrad Heini	Intercooperation	Phone: +41 31 385 10 10 E-Mail: hconrad@intercooperation.ch
Crole-Rees Anna	CDC	Pone: +41 21 625 64 64 E-Mail: crolerees@bluewin.ch
Diarra Mamadou M.	IC Delegation Sahel	E-Mail: mmdiarra@icsahel.org
Durrer Stephan	Pro Natura	Phone: +41 61 317 92 46 E-Mail: stephan.durrer@pronatura.ch
Favre Jean-Cyril	GEOSUD SA	Pone: +41 26 919 81 50 E-Mail: jcfavre@geosud.ch
Felber Ruedi	NADEL	Phone: +41 1 632 50 97 E-Mail: felber@nadel.ethz.ch
Fleischli Simon	Centre Ecologique Albert Schweizer	Phone: +41 32 725 08 36 E-Mail: simon.fleischli@caramail.com
Galland Pierre	Consultant	Phone: +41 32 725 54 57 E-Mail: npgalland@swissonline.ch
Gasana James	Intercooperation	Phone: +41 31 825 10 10 E-Mail: jgasana@intercooperation.ch
Gerrits Andreas	SDC	Phone: +41 31 322 33 28 E-Mail: andreas.gerrits@deza.admin.ch

Godi François	GG Consulting S.a.r.l	Phone: +41 21 887 88 12 E-Mail: ggconsulting@vtx.ch
Greco Claudia	Intercooperation	Phone: +41 31 382 10 10 E-Mail: cgreco@intercooperation.ch
Guzman David	EPFL	Phone: + 41 21 693 32 62 E-Mail: david.guzman@epfl.ch
Hafner Othmar		Phone: +41 31 972 08 22 E-Mail: ot.hafner@bluewin.ch
Heintz Olivier	Bark Cloth, DE	Phone: +49 (0)700-22752568 E-Mail: barkcloth@barkcloth.de
Hilfiker Karin	Helvetas	Phone: +41 1 368 65 00 E-Mail: karin.hilfiker@helvetas.org
Huwiler Franziska	Intercooperation	Phone: +41 31 385 10 10 E-Mail: fhuwiler@interccoperation.ch
Jenal Marcus	SIPPO	Pone: +41 1 365 56 12 E-Mail: mjenal@sippo.ch
Kläy Andreas	CDE	Phone: +41 31 631 88 22 E-Mail: andreas.klaey@cde.unibe.ch
Küchli Christian	BUWAL	Phone: +41 31 324 77 80 E-Mail: christian.kuechli@buwal.admin.ch
Malach Viera	Infosud	Phone: E-Mail:
Mauderli Ueli	ETHZ	Phone: +41 1 632 32 03 E-Mail: ueli.mauderli@env.ethz.ch
Maurer Rolf	TULUM SA	Phone: +41 91 606 63 73 E-Mail: info@tulum-consult.com
Messerli Peter	NCCR North-South	Phone: +41 31 631 30 58 E-Mail: peter.messerli@cde.unibe.ch
Michon Geneviève	IRD France	Phone: +33 (0) 4 67 63 69 82 E-Mail: genevieve.michon@mpl.ird.fr
Morel Jack	Assamba	Phone: E-Mail:
Mühlethaler Urs	SHL	Phone: +41 31 910 21 11 E-Mail: urs.muehlethaler.fwi@shl.bfh.ch
Müller Alois	Seecon AG	Phone: +41 41 461 07 53 E-Mail: alois.mueller@seecon.ch

Ndoye Ousseynou	CIFOR Cameroon	Phone: +237 2237434 E-Mail: o.ndoye@cgiar.org
Pfund Jean-Laurent	Intercooperation	Phone: +41 31 385 10 10 E-Mail: jpfund@intercooperation.ch
Pleines Thierry	Brücke – Le pont	Phone: +41 26 425 51 51 E-Mail: Thierry.pleines@bruecke-lepont.ch
Reiner Susann	Regenwald-Institut	Phone: +49 761 556 13 19 E-Mail: reiner@regenwald-institut.de
Robinson Patrick	Consultant	Phone: +41 32 753 69 30 E-Mail: pat.robinson@bluewin.ch
Robledo Carmenza	Intercooperation/EMPA	Phone: +41 31 385 10 10 E-Mail: crobledo@intercooperation.ch
Roduner Daniel	LBL	Phone: +41 52 354 97 69 E-Mail: daniel.roduner@lbl.ch
Ruiz-Pérez Manuel	Universidad Autonoma de Madrid, Spain	Phone: +34 91 497 80 00 E-Mail: manuel.ruiz@uam.es
Samyn Jean-Marie	Intercooperation	Phone: +41 31 385 10 10 E-Mail: jsamyn@intercooperation.ch
Sansonnens Bertrand	Pro Natura	Phone: +41 76 396 02 22 E-Mail: bertrand.sansonnens@pronatura.ch
Schaltenbrand Hans	Helvetas	Phone: +41 1 368 65 00 E-Mail: hans.schaltenbrand@helvetas.org
Schild Regula	CDE	Phone: +41 33 222 75 50 E-Mail: regula.schild@gmx.ch
Schmidt Eva	Consultant	Phone: +41 31 305 62 44 E-Mail: eva.schmidt@gmx.ch
Schmidt Kaspar	ETHZ/Univ. Reading UK	Phone: +41 44 632 32 03 E-Mail: kaspar.schmidt@env.ethz.ch
Schmidt Peter	Helvetas	Phone: +41 1 368 65 00 E-Mail: peter.schmidt@helvetas.org
Schneider Jürg	BUWAL	Phone: +41 31 322 68 95 E-Mail: juerg.schneider@buwal.admin.ch
Seeland Klaus	ETHZ	Phone: +41 44 632 32 19 E-Mail: klaus.seeland@env.ethz.ch
Sieber Patrick	NADEL	Phone: +41 31 333 48 59 E-Mail: psieber@giub.unibe.ch

Sommer Martin	SDC	Phone: +41 31 325 92 82 E-Mail: martin.sommer@deza.admin.ch
Sorg Jean-Pierre	ETHZ	Phone: +41 1 632 32 14 E-Mail: jean-pierre.sorg@env.ethz.ch
Spack Simone	HE-Arc	Phone: +41 32 342 03 16 E-Mail: sspack@freesurf.ch
Staubli Franziska	SIPPO	Phone: +41 1 365 54 89 E-Mail: fstaubli@sippo.ch
Steimann Bernd	Institute of Geography ZH	Phone: +41 1 635 51 65 E-Mail: bernd@geo.unizh.ch
Strasser Balz	University of Zurich Dept of Geography	Phone: +41 1 635 6512 E-Mail: balz@geo.unizh.ch
Streit Kathrin	Student	
Tendon Jean-Marc	CEAS Mali	Phone: +41 327 25 08 36 E-Mail: ceas.ne@bluewin.ch
Thönnissen Carmen	SDC	Phone: +41 31 322 03 05 E-Mail: carmen.thoennissen@deza.admin.ch
Ukkerman Rob	SNV Netherlands	Phone: +31 70 344 01 14 E-Mail: R.Ukkerman@snv.nl
Von Reitzenstein Eckart	NADEL	Phone: +41 31 331 85 71 E-Mail: Eckart.vonReitzenstein@gmx.de
Von Schulthess Laurence	SDC	Phone: +41 31 322 33 59 E-Mail: laurence.vonschulthess@deza.admin.ch
Von Sury Felix	Intercooperation	Phone: +41 31 385 10 10 E-Mail: fvonsury@intercooperation.ch
Walther Roger	UNACO	Phone: +41 79 712 57 56 E-Mail: roger.walther@unaco.ch
Wenger Ruth	Intercooperation	Phone: +41 31 385 10 10 E-Mail: rwenger@intercooperation.ch
Werner Frank	Consultant	Phone: +41 1 462 93 78 E-Mail: frank.werner@gmx.ch
Wieser Martin	RuralConsult	Phone: +41 32 751 28 95 E-Mail: ruralconsult@bluewin.ch
Wilkes Jerylee	Student	Phone: +41 76 489 69 94 E-Mail: jeryleew@yahoo.com
Wüthrich Kurt	HSB	Phone: +41 32 344 03 96 E-Mail: kurt.wuethrich@bfh.ch

Zieschang Olaf		Phone: +41 78 793 03 91 E-Mail: o.zieschang@bluewin.ch
Zingerli Claudia	ETHZ	Phone: +41 44 632 32 22 E-Mail: claudia.zingerli@env.ethz.ch
Zosso Géraldine		Phone: +41 22 782 05 58 E-Mail: gzosso@yahoo.fr
Zürcher Ernst	HSB	Phone: +41 32 344 03 67 E-Mail: ernst.zuercher@hsb.bfh.ch

inter
cooperation

Natural Resource Management
Rural Economy
Local Governance and Civil Society

Maulbeerstrasse 10
P.O. Box 6724
CH-3001 Berne, Switzerland

T +41 31 385 10 10
F +41 31 385 10 09
info@intercooperation.ch
www.intercooperation.ch

DEZA DIREKTION FÜR ENTWICKLUNG UND ZUSAMMENARBEIT
DDC DIRECTION DU DÉVELOPPEMENT ET DE LA COOPÉRATION
DSC DIREZIONE DELLO SVILUPPO E DELLA COOPERAZIONE
SDC SWISS AGENCY FOR DEVELOPMENT AND COOPERATION
COSUDE AGENCIA SUIZA PARA EL DESARROLLO Y LA COOPERACIÓN

Staatssekretariat für Wirtschaft
Secrétariat d'Etat à l'économie
Segretariato di Stato dell'economia
State Secretariat for Economic Affairs
SWITZERLAND seco