

Gender and non-timber forest products

**Promoting food security
and economic empowerment**



Enabling poor rural people to overcome poverty

Marilyn Carr, international consultant on gender, technology, rural enterprise and poverty reduction, prepared this paper in collaboration with Maria Hartl, technical adviser for gender and social equity in the IFAD Technical Advisory Division.

Other staff members of the IFAD Technical Advisory Division contributing to the paper included: Annina Lubbock, senior technical adviser for gender and poverty targeting, Sheila Mwanundu, senior technical adviser for environment and natural resource management, and Ilaria Firmian, associate technical adviser for environment and natural resource management.

The following people reviewed the content: Rama Rao and Bhargavi Motukuri (International Network for Bamboo and Rattan), Kate Schreckenber (Overseas Development Institute), Nazneen Kanji (Aga Khan Development Network), Sophie Grouwels (Food and Agriculture Organization of the United Nations) and Stephen Biggs (School of Development Studies, University of East Anglia).

The opinions expressed in this book are those of the authors and do not necessarily represent those of the International Fund for Agricultural Development (IFAD). The designations employed and the presentation of material in this publication do not imply the expression of any opinion whatsoever on the part of IFAD concerning the legal status of any country, territory, city or area or of its authorities, or concerning the delimitation of its frontiers or boundaries. The designations 'developed' and 'developing' countries are intended for statistical convenience and do not necessarily express a judgement about the stage reached by a particular country or area in the development process.

Cover:

Women make panels and carpets from braided coconut leaves at this production unit near Naickenkottai, India.

© IFAD, A. Hossain

© 2008 by the International Fund for Agricultural Development (IFAD)

August 2008

Table of contents

Preface	2
Acronyms	3
Introduction	4
Women in the informal economy	4
Women and NTFPs: Opportunities and constraints	5
Value chains and women's empowerment	9
Field experiences	10
Bamboo and rattan	10
Mushrooms	14
Bee products	16
Medicinal and aromatic plants	20
Fruits, nuts and seeds	23
Gums	26
Analysis	30
Innovative interventions	30
Resource scarcity	32
Competitiveness/market access	33
Organizing	34
Conclusions	35
Bibliography	38
Boxes	
1 Non-timber and non-wood forest products – some facts and figures	6
2 International Network for Bamboo and Rattan (INBAR)	12
3 Linking mushrooms with markets in Europe	16
4 International Centre of Insect Physiology and Ecology (ICIPE)	19
5 Hills Leasehold Forestry and Forage Development Project (HLFFDP)	22
6 GCC and the Andhra Pradesh Tribal Development Project (APTDP)	27
Figures	
1 Rattan value chain (Philippines)	11
2 Mushroom value chain (Mexico)	15
3 Honey value chain (Uganda)	17
4 Medicinal and aromatic plant value chain	21
5 Shea butter value chain (Burkina Faso)	24
6 Gum karaya value chain (Andhra Pradesh, India)	29

Preface

If development is to be effective, it should empower rural women and men equally. IFAD-supported projects and programmes address inequalities by enhancing women's access to productive resources and increasing their participation in decision-making. Over its 30 years of existence, IFAD has placed increasing importance on gender equality and women's empowerment, both as objectives in themselves and as instruments for poverty reduction. In IFAD's experience, women can become a powerful force in transforming the lives of their families and communities when programmes acknowledge the specific needs and constraints of both women and men, and when women have concrete opportunities.

'Non-timber forest products' is a sector that offers great promise for women, but to enhance the effectiveness of poverty reduction programmes, opportunities for the greater involvement of women are essential. Obviously, they should be activities that can accommodate the constraints of traditional domestic duties and recognize gender differences in knowledge of natural resources, biodiversity and conservation.

Recognizing the importance of NTFPs in promoting food security and rural poverty reduction, IFAD has invested significant financial resources in this sector and is a supporter of the recently launched Global Partnership Programme on NTFP, which brings together stakeholders from the public and private sectors.

Through its programmes and projects, IFAD has accumulated valuable knowledge on how to encourage broader and more significant support to the NTFP sector and to adopt measures that enable women and men to benefit equally from its development.

Women producers operating in the informal NTFP sector in developing countries face discrimination and many obstacles. This publication highlights approaches used by IFAD and other agencies to support women more effectively. It emphasizes the multiple dimension of the challenges – in division of labour, differences in access to credit and market information, and environmental issues – and presents ways to expand the role of women as agents of change in this sector.

The publication is the result of an initiative by IFAD's Technical Advisory Division to promote better methods of enabling poor rural people, and especially women, to benefit from the NTFP sector. It takes stock of past experience and demonstrates that there are many opportunities to invest in NTFPs in support of rural livelihoods.

Acronyms

APTDP	Andhra Pradesh Tribal Development Project
CECI	Canadian Centre for International Studies and Cooperation
CFUG	community forest user group
CIFOR	Center for International Forestry Research
FAO	Food and Agriculture Organization of the United Nations
GCC	Girijan Cooperative Corporation Ltd.
HLFFDP	Hills Leasehold Forestry and Forage Development Project
ICIMOD	International Centre for Integrated Mountain Development
ICIPE	International Centre of Insect Physiology and Ecology
IDRC	International Development Research Centre
IDS	Institute of Development Studies
ILO	International Labour Organization
INBAR	International Network for Bamboo and Rattan
ISO	International Organization for Standardization
NTFP	non-timber forest product
SEWA	Self-Employed Women's Association
UNDP	United Nations Development Programme
UNEP-WCMC	United Nations Environment Programme – World Conservation Monitoring Centre
UNIFEM	United Nations Development Fund for Women
WWF	World Wide Fund for Nature

Introduction

Much has been written about the negative impact of globalization on the world's poor people, and especially on women. But globalization also opens up new economic opportunities if poor women producers and workers are able to take advantage of them. Nowhere is this more evident than in the non-timber forest product (NTFP) sector.

NTFPs have traditionally provided a source of nutrition and income for millions of indigenous women and men in some of the most remote areas of developing countries. Currently, interest in natural health and beauty products is fuelling a massive growth in demand for these products in North America, Europe and Japan. But the women and men who collect the raw materials are usually unable to share in the gains from this trend unless enabled to do so. Typically, NTFP gatherers receive much less than 10 per cent of the selling price of the final product. Without the ability to bargain on equal terms with distributors and retailers, and without the technical and financial means to add value at the source, gatherers have little chance of increasing their power and returns within the production chain.

This paper examines some of the constraints and opportunities faced by women producers in the informal NTFP sector. It reviews interventions introduced by IFAD and other agencies to help women producers increase their incomes while retaining access to and control of the natural resource base.

Value chain analysis demonstrates that the production chain distributes power and

returns unevenly between women and men – and also between gatherers/producers and distributors/retailers – for six major NTFPs: bamboo and rattan; mushrooms; bee products; medicinal and aromatic plants; fruits, nuts and seeds; and gums. The results of the analysis highlight how and where interventions have succeeded in organizing groups and in increasing access to credit, training, technology and markets.

Women in the informal economy

Throughout the developing world, women's enterprise activities are of key importance in providing the food and income that enable their families to exist. Official statistics estimate this income, which often is the sole source of support for families, at up to half of each country's national income. It is earned almost exclusively within the large and growing informal economy.¹

Women's informal enterprises and incomes have come increasingly under threat with the rapid spread of trade liberalization and globalization. In particular, women's ability to grow food has decreased as farmers devote more land to commercial export crops and as women's labour shifts from food

¹ In Africa, for example, official statistics indicate that the share of the informal economy in the non-agricultural workforce is over 70 per cent, and that 84 per cent of women non-agricultural workers are informally employed, compared with 63 per cent of men. If informal employment in agriculture is included, as is done in some countries, the proportion of informal employment increases greatly (International Labour Organization (ILO) 2002).

production into unpaid labour on family farms producing crops for export. At the same time, many traditional non-farm enterprises operated by women, such as basket-making and the processing of cooking oils, are disappearing as a result of import competition (Carr and Chen 2004).

Within this context, it is increasingly important for women producers in the informal economy to maintain their ability to earn a livelihood. In most cases, this will involve:

- upgrading quality and/or reducing costs so as to compete with imports
- finding markets that are currently selling imported goods but could convert to local production and/or
- diversifying into products for regional and global markets

Women and NTFPs: Opportunities and constraints

NTFPs offer great promise for women producers in the informal economy. Although official production and trade statistics and research have somewhat neglected the sector, there is a sizeable and growing international market for NTFPs. These include essential oils, medicinal plants, gum arabic, rattan, bamboo, natural honey, brazil and other edible nuts, mushrooms, various types of fibre, and shea and other types of wild nuts and seeds used in cooking, skin care and for other purposes. In all, there are now 150 NTFPs of major significance in international trade. While exports include some without value added, there is an increasing trend towards local processing of a range of more sophisticated products (Belcher and Schreckenberg 2003). Together these NTFPs involve millions of workers and producers, including many indigenous women and men in the most remote areas of developing countries.

With the huge growth in demand related to natural health and beauty products, there are enormous opportunities for producers in

developing countries to link with these markets. In many cases, there are also large and untapped domestic and regional markets for such products (Shackleton, Dhanley and Ndoye 2007). Several agencies, including IFAD, have increased their support – in the form of loans, grants and technical assistance – to enable indigenous populations to take advantage of these new economic opportunities and to share equally in the increased gains from globalization.

Although new economic opportunities exist in this sector, it is not easy for women to take advantage of them.

- If NTFPs are not processed locally, they yield low returns.
- Forest dwellers do not have access to market information.
- Expansion of the NTFP sector can result in overexploitation or the loss of access to the natural resource base.

Low returns. Resource-poor people, and particularly women, find NTFP activities attractive because of the low technical and financial entry requirements, freely available resource base and instant cash in times of need. However, if they do not process NTFPs locally, the raw materials tend to yield low returns and offer little prospect for accumulation of the capital needed to escape poverty.

Recent research in Mexico and Bolivia shows that NTFPs can contribute to poverty reduction by providing 'safety nets', which reduce the vulnerability of poor communities to risk when crops fail or illness strikes. They can also contribute to poverty reduction by supplementing income from the more-important farm and off-farm income-generating activities. However, special interventions by government, the commercial sector or NGOs are usually necessary if NTFP activities are to provide poor people with a 'stepping stone' to lift them out of poverty on a sustained basis (Marshall, Schreckenberg and Newton 2006).

Lack of access to market information. People who gather forest products live in

BOX 1

Non-timber and non-wood forest products – some facts and figures

The terms non-timber forest product (NTFP) and non-wood forest product (NWFP) are used interchangeably. They are products of biological origin, other than wood, derived from forests, other wooded land and trees outside forests.

NTFPs may be gathered in the wild or from trees outside forests or produced in forest plantations and agroforestry schemes.

Examples of NTFPs include food additives (edible nuts, mushrooms, honey, fruits, herbs, spices and condiments, aromatic plants, game); fibres (used in construction, furniture, clothing or utensils); resins and gums; and plant and animal products (used for medicinal, cosmetic or cultural purposes).

Several million households worldwide depend heavily on NTFPs for subsistence or income. Some 80 per cent of the people in the developing world use them for health and nutritional needs. Women from poor households generally rely on them most – for household use and income.

NTFPs also provide raw materials for national, large-scale industrial processing and are important export commodities, with at least 150 significant products in terms of international trade. They have also attracted considerable global interest in recent years for their contribution to environmental objectives, including the conservation of biological diversity.

Source: www.fao.org/forestry/site/nwfp/en.

A mother and child collect cocoa pods in Lekie-Assi, Cameroon.

© IFAD, P. Maitre



remote areas and are among the poorest and least well informed, with little formal education. Without access to market information, forest dwellers have little knowledge of how much a consumer in the city or in developed countries will pay for the final product, and they have little or no means of bargaining for an increased stake in growing profits. As mentioned, they typically receive less than 10 per cent of the final selling price.

Without organizing into producers' or marketing groups and without access to information and technological and economic resources, women have very little chance of increasing their control over and returns from the productive process. Membership in a group would enable them to gain a more powerful position in the value chain, and access to resources would enable them to add value at the source. Only when forest dwellers receive resources to address these constraints directly will women be able to adopt strategies that help them use forest resources as a means of escaping poverty.

Overexploitation and loss of control of the natural resource base. Although it is possible to address constraints relating to productivity and market access, expansion of the NTFP sector brings two types of threat for forest dwellers and users. One is that increased commercialization of NTFPs can result in overexploitation of the resource base on which forest dwellers depend. In India, Indonesia and parts of Africa, there is evidence that gatherers are overharvesting some important medicinal plants towards extinction (Hyman 1996).

Nevertheless, many experts in the forestry sector believe that exploitation of NTFPs is less ecologically destructive than timber harvesting and thus provides a sounder basis for sustainable forest management (Arnold and Ruis Perez 1998). Recent research on a variety of NTFPs in Latin America found that in 75 per cent of the cases studied, overexploitation of the natural resource base was the initial outcome of increased commercialization. In most cases, however,

forest dwellers adopted improved resource management or domestication/cultivation as strategies to retrieve a balance.

This leads to the second threat. Domestication/cultivation can result in losing control of a natural resource that has previously represented an independent source of income. It is important that inhabitants of remote forest areas are able to connect to the economic benefits of growing global markets for NTFPs. However, it is equally important that they be able to do so on terms favourable to themselves.

A trend towards plantations of NTFPs may offer a way of both conserving the resource base and expanding exports. It may also offer wages to women in rural areas, but such employment offers little status or security (Carr and Chen 2002).² It is a poor alternative to building on the existing knowledge and activities of women producers in informal sectors – through the formation and strengthening of their own organizations to enable them to access export markets.

However, decreasing supplies of NTFPs may not be the result of excessive harvesting, but of the land-use conversion that takes place. Those most dependent on NTFPs lack sufficient power to prevent changes in land use. This has happened, for example, in Benin, where the introduction of animal traction (largely for cotton growing by men farmers) has resulted in the removal of scattered parkland trees such as shea (Schreckenberg 2004). Conversion of land to agriculture in Bolivia has also resulted in reduced supplies of jipijapa fibre (a stemless, palmlike plant), which is the basis of a traditional industry for rural women (Marshall, Schreckenberg and Newton 2006).

² Women employed on NTFP plantations face work conditions similar to those of the millions of women garment workers in Asia and women horticultural workers in Africa. The former have been the backbone of export-led growth in the Asian region, and the latter make it possible to supply supermarkets in the United Kingdom of Great Britain and Northern Ireland with much of their produce.

Value chains and women's empowerment

Women and men living in poverty in rural communities are trapped at the production end of global value chains. Most profits go to traders, distributors and retailers, who tend to be men from less remote and richer communities. But even at the production level, women are likely to work in the lowest skilled and lowest paid jobs. Given their major role in lifting themselves and their families out of poverty, any poverty reduction programme should ensure that women can position themselves more favourably within these large and complex chains.

Several recent publications offer suggestions on how value chain analysis can examine the integration of poor rural women into NTFP global value chains, as well as on how to improve their position (Marshall, Schreckenber and Newton 2006; Royal Tropical Institute (KIT) 2006; Kaplinsky and Morris 2001).

These publications present variations on four ways in which the upgrading or improvement of value chains can benefit poor rural women producers and, in particular, indigenous women from remote communities:

- Process upgrading – to increase the efficiency of production within or between stages of the value chain. Typically, forest dwellers accumulate larger quantities of the product or use a new technology, supported by access to credit and training. An example of this is the introduction of improved beehives or oil expellers. To the extent that women have less time than men to increase output and less access to credit, technology and training, they are at a disadvantage at this level of upgrading.
- Product upgrading – to improve quality or introduce new products using the same raw materials. This is particularly common in NTFP value chains and can enable producers to gain access to a more specialized 'niche' market and

protect themselves against product substitution. Examples include diversifying from honey into organic honey or other bee products, such as royal jelly and propolis, which have very high value in niche markets.

- Functional upgrading – to change the mix of activities carried out within a value chain, for example a women's production cooperative taking on new functions such as export marketing, or women taking on new and more lucrative roles within the value chain.
- Chain upgrading – to move to a new product supply chain. For example, a women's cooperative or association successful in exporting one product could establish a new value chain for a related product not exported previously.

One study goes a step further (Royal Tropical Institute 2006), developing a matrix for classifying the integration of poor rural producers into NTFP value chains. There are four types of involvement:

- actors – women who simply gather and handle NTFPs, with no involvement in processing the product or in managing the value chain
- integrators – women who do some processing of their product, but still have no say in management of the chain and rely on intermediaries to reach markets
- partners – women who do no processing of their product, but do have a say in management of the chain
- co-owners – women who both add value and have a say in management – thus increasing both returns and power

This is an important form of analysis, as far too many projects and interventions concentrate only on raising income, without concern for increasing ownership and empowerment.

Field experiences

Forest dwellers collect hundreds of NTFPs, most of which enter local, regional and global markets. A review of this nature can cover only a few of these products. The criteria used for selection were:

- significant IFAD support for interventions involving these products (based on an extensive internal review)
- evidence that case studies provide sufficient detail on the value chain and on the involvement of women
- a focus on indigenous women in remote communities
- large-scale production and growing markets – particularly at the global level
- a mixture of wild collection and domestication
- a variety of organizing structures at horizontal and vertical levels
- additional interesting features, such as the ability to meet other than income needs at the local level (for example, nutritional and medicinal needs as well)

According to these criteria, the review chose the following products as priorities for analysis:

- bamboo and rattan
- mushrooms
- bee products
- medicinal and aromatic plants
- fruits, nuts and seeds
- gums

For each of these product groups the paper provides:

- an overview that looks briefly at government policies, trade environment

and global exports, growth in output and employment, division of labour and environmental issues

- a brief summary of approaches being used by IFAD and other agencies to support women's participation in and benefits from an expansion of the NTFP sector at policy, sectoral and project levels. Section III offers an analysis of these approaches

Bamboo and rattan

Overview

Bamboo is the world's largest plant in the grass family. Drawing on a long history of use, it has been integrated into the modern technological world, with many types of goods produced – from high-quality paper to chopsticks, woven baskets, *agarbatti* (incense sticks), crafts, furniture, plywood and floorboard. Some of the newer bamboo-based products include soaps, water purifiers, pain relievers, lotions and textile products (*Non-Wood News* 14). Over one billion people live in bamboo houses, and in Tokyo and Hong Kong, the scaffolding of high-rise structures employs bamboo (www.inbar.org/facts).

China is the richest bamboo-producing country in the world, with over 500 bamboo species and sales of some US\$2.4 billion in bamboo products annually. The value of one culm is US\$1, while the value of a final bamboo product, even if made at the village level, can be significantly higher, thus adding

much-needed income at the local level (*Non-Wood News* 13). Bamboo shoots are another major export product, with exports from Taiwan alone reaching US\$50 million per year (www.inbar.org/facts).

Rattan provides sustainable income to some of the most disadvantaged people living in and on the fringes of forests. In the 1970s, Indonesia became the major supplier of rattan, accounting for nearly 70 per cent of global trade. The value of rattan exports in Indonesia has increased a stupendous 250-fold in just 17 years, with lesser but still very large increases in other countries in South-East Asia. Overall global trade is worth US\$4 billion annually, and domestic trade is worth US\$2.5 million. Markets for rattan consumption in Europe, North America and Japan are growing steadily (www.inbar.org/facts).

Both bamboo and rattan are environmentally friendly. A 60-foot bamboo grows in only 59 days, versus 60 years for a tree. Rattan 'hugs' trees and saves them from the logger's axe by providing equal or more benefit than the companion tree, without disturbing the natural habitat (www.inbar.org/facts). Despite this, wild stands of both species are declining, which has resulted in:

- a trend towards the cultivation of plantations

- introduction of government policies to ban the export of unprocessed bamboo and rattan

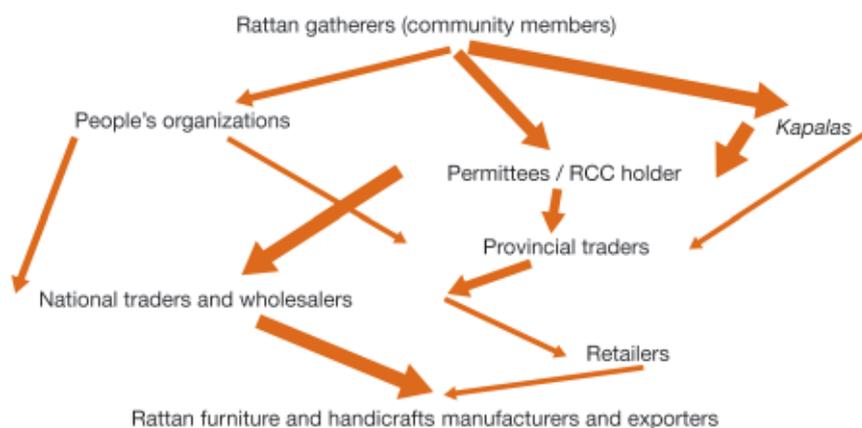
While export bans have led to increased supplies for local, value added industries in the medium term, they have often resulted in short-term hardships for exporters of raw materials (Sastry 2005).

Both industries are highly complex and fragmented. They cover collection, trading, artisanal production, small-scale manufacture and large-scale factory processing for export. The collection process also involves an elaborate regulatory system. Figure 1 illustrates the range of activities involved in the rattan value chain in the Philippines. Both industries lend themselves to labour-intensive processing and thus generate diverse and massive levels of employment for indigenous populations. For example, the rattan furniture industry employs 1.2 million people in Asia alone, of whom 90 per cent work in cottage industries and small firms (Sastry 2005).

Women and men participate in all aspects of the bamboo and rattan value chains, although women tend to carry out lower-paying activities. For example, women collect bamboo shoots while men collect higher-value bamboo culms. Similarly, at the processing level, women tend to engage

FIGURE 1
Rattan value chain (Philippines)

Physical Flow of Rattan in the Philippines



Note: The width of the arrows is proportional to the volume of trade in rattan poles among the actors groups.
Source: International Resources Group (IRG) / EnterpriseWorks/VITA (2006).

BOX 2

International Network for Bamboo and Rattan (INBAR)

INBAR was established in 1993 with the help of a grant from IFAD (and support from the International Development Research Centre – IDRC). A multidisciplinary network, it provides a systems approach to addressing social, economic, policy, institutional and technical issues and seeks to improve the well-being of producers and users of bamboo and rattan within the context of a sustainable resource base. Together with its partners, INBAR develops, provides and promotes appropriate technologies and solutions with regard to bamboo and rattan in order to benefit people and the environment. Its programmes cover: livelihood and economic development and social aspects, engineering, natural resource management, use of products, and diffusion of information on validated technologies.

Sources: IFAD (2000a); www.inbar.org.

in low-technology activities, such as bamboo chopstick cutting, processing bamboo shoots and rolling incense sticks, which they can do at home. Men tend to engage in more capital-intensive tasks such as factory-level manufacture of furniture for national and export markets (Yang and Susuiwei 2004).

Interventions

The literature has little to say about the gender impact of dwindling supplies of wild bamboo and rattan or about the implications for women and men of policies to increase plantation. This deserves further research.

There are, however, examples of approaches used to improve the incomes of women in the processing part of the chain. Through its grants to the International Network for Bamboo and Rattan (INBAR), IFAD works on two levels. First, through a detailed study in China, INBAR sought a better understanding of the gender impact of major support programmes to bamboo growing areas. The study showed that women were failing to benefit equally with men because staff lacked gender training and sensitivity. It pointed to a need for gender analysis in order to inform the planning and implementation of all such programmes (Yang and Sucuiwei 2004).

Second, at the hands-on level of pilot project implementation, INBAR has been supporting a number of Indian NGOs in

their work with tribal women who make a range of products based on bamboo and cane. As part of its Livelihood Development Project, the Tripura Bamboo and Cane Development Centre (TRIBAC) is assisting 350 tribal women in organizing self-help groups (SHGs). TRIBAC is providing skills training to these women to enable them to produce high quality *agarbatti* (incense sticks), which they then sell under their own brand name. In this way, the women can move further up the value chain, where they can capture greater profit. There are also valuable links to earlier stages in the value chain, with bamboo being supplied by a producers' association of which the women and men also are members. The legal status of the association enables the women's groups to tap into government schemes for loans and other resources. In a related project, implemented by the Konkan Bamboo and Cane Development Centre (KONBAC), tribal women working as bamboo artisans have been taught to make high-quality roti baskets, sold in cosmopolitan markets – again under their own brand name. The new designs are the result of a collaboration with the Indian Institute of Technology in Mumbai. An IFAD evaluation has looked at the lessons learned from these two pilots, with a view to replication elsewhere (Kumar and Reza 2007; Rao, Motukuri and Karpe 2008).



A woman braids coconut leaves to make carpeting and panelling for homes at a production unit near Naickenkottai, India.

© IFAD, A. Hossain

Mushrooms

Overview

Traditionally, women and girls in all parts of the world have collected wild mushrooms such as oyster, chanterelle, morel and shitake/matsutake from the forest floor. Recently, there has been a loss of skill in identifying safely edible mushrooms, and local populations are reluctant to consume them. Consequently, there has been a growth in the production of domestic mushrooms, in particular button mushrooms, which are cultivated mainly by women (McGrath 2003).

Export markets for higher-value mushrooms such as shitake/matsutake have grown considerably, in part because of the high demand of large consumers such as Japan. This is resulting in a shift in the division of labour in supplying countries. Men participate increasingly in all parts of the global value chains for high-value mushrooms, while women continue to focus on lower-value varieties consumed within the household or sold in local markets.

Mushrooms provide a major source of nutrition for local populations. They are high in protein and essential minerals, and remote poor populations often use them as a substitute for meat. They also have great medicinal value: people use them widely in parts of the world with high rates of HIV/AIDS, as they believe them to boost the immune system.

Although collection and cultivation of mushrooms can often result in higher returns than other crops, they are seasonal and difficult to harvest, transport, process and store. This is a particular problem in satisfying distant markets, which often demand fresh rather than dried or canned mushrooms.

Marketing chains vary among countries and by type of mushroom, with several types of chains usually prevailing in any one country. Figure 2 gives an example from Mexico in which women in indigenous communities are integrated into three different chains: local fresh mushrooms,

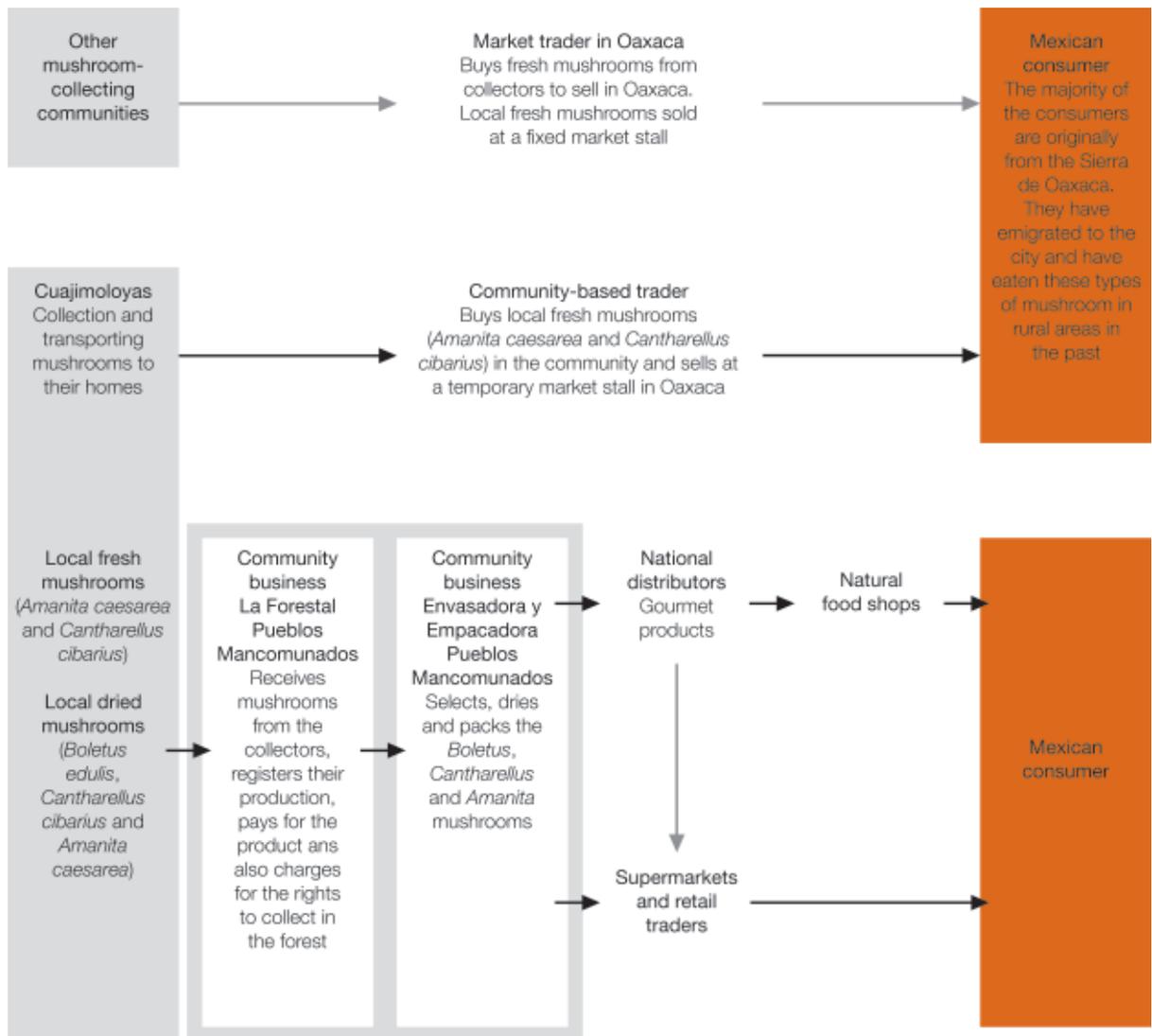
dried mushrooms for cities and supermarkets, and high-value fresh mushrooms for export to Japan. Typically, women collect the mushrooms, which is the lowest-value task in the chain, while men carry out higher-value activities. An exception is local fresh mushrooms, which women also transport and market (Marshall, Schreckenberg and Newton 2006).

Interventions

The issue of decreasing supplies of mushrooms and the inability to meet growing markets is being addressed at two levels. First, the private sector has been very active in seeking out new suppliers. For example, Japanese businesses have gone to neighbouring China and other Asian countries such as Bhutan and as far away as Mexico to source matsutake mushrooms (Chen 2004; Marshall et al. 2006). Second, research-and-development programmes have increased supplies in a variety of innovative ways. For example, in Africa, the Zero Emissions Research Institute (ZERI) has studied the recycling of waste products, such as water hyacinth and cotton waste, as substrates for mushroom production. ZERI uses the resulting technology to help women start profitable businesses in mushroom cultivation (UNDP 2004; McGrath 2003).

A number of development agencies are adopting a variety of approaches to enable women to access global markets for mushrooms. Methodus Consultora, a local NGO in Oaxaca City, Mexico, has enabled a community-based factory to dehydrate, pack and distribute the factory's own brand of mushrooms to specialized outlets. In addition to supplying improved technology and marketing advice, the NGO has undertaken the environmental assessment needed to secure rights to pick more mushrooms (Marshall, Schreckenberg and Newton 2006). In Nepal, the Canadian Centre for International Studies and Cooperation (CECI), an international NGO, has helped double the income of women and increase their control over the mushroom

FIGURE 2
Mushroom value chain (Mexico)



Source: Marshall, Schreckenber and Newton (2006).

marketing chain. CECI introduced improved technologies, provided market and price information, and promoted the formation of a committee of collectors and traders (Chandrasekharan 1998).

The private sector has also been very active. Individual entrepreneurs have received loans from various sources to invest in the export of mushrooms. A loan from IFAD has enabled a woman entrepreneur in Bosnia and Herzegovina to establish a successful small business that now exports 40 tonnes of fresh and dried mushrooms each year to Germany

and other European countries. She hires 2,000 farmers (mainly women) to collect mushrooms, but they have no contracts and no decision-making roles in the production chain of which they are a part (IFAD 2006; L. Sinajic, pers. comm., Sarajevo 2007).

Mushrooms have even presented opportunities for social entrepreneurship. In Uganda, a private company, Fruits of the Nile, sources dried oyster mushrooms from women farmers and exports them to the United Kingdom. The social entrepreneur that owns the company raised donor funds to enable

BOX 3

Linking mushrooms with markets in Europe

The Flores company was registered in 1990 in Bosnia and Herzegovina to collect forest products. With the help of IFAD credit in 2003, the woman owner was able to purchase improved equipment, increase operational costs and expand output considerably – from 16 tonnes of mushrooms in 2003 to 40 tonnes in 2006. Much is exported to Germany in both fresh and dried form through contacts made by the owner before receiving the IFAD credit.

The company hires 2,000 farmers, who collect medicinal herbs and blueberries as well as mushrooms. Although the activity is seasonal and informal (with farmers having no contract with the company), it provides a useful source of income in addition to agricultural activities, with some farmers able to earn up to half the average national per capita income through mushroom collection in good years. Approximately two thirds of the collectors are women, who are more familiar with mushroom collection than are men. Women are also the main recipients of training sessions organized and run by the company's owner.

This IFAD loan has thus enabled women to gain access to a new source of income by linking an existing activity and product to an export market.

Source: IFAD (2006)

women to purchase solar dryers and to provide training in their use (www.fmfoods.co.uk).

Finally, countries that are suffering from supply shortages, such as Japan, are on the lookout for new sources of mushrooms. They provide entrepreneurs in other countries with capital to collect, purchase, pack or export them. In Mexico, entrepreneurs from these countries have created a new supply chain for indigenous communities in mushroom growing areas, and they take on all the risks and losses involved in not meeting quotas (Marshall, Schreckenber and Newton 2006).

Bee products

Overview

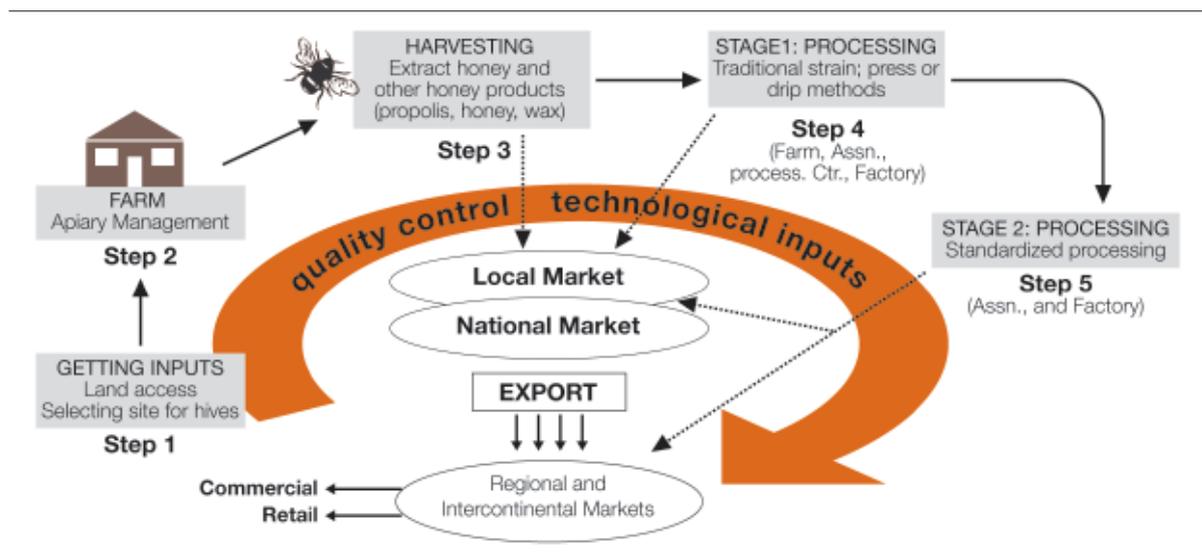
Bee-keeping is a growing industry in many developing countries. In part, this is due to technological changes that support decentralized production of better quality honey, as well as diversification of production into high-value products such as beeswax, propolis, royal jelly and venom. It is also due to expanding markets, both domestically and in particular globally, in response to increased

demand for organic honey, high-quality wax and other bee products for use in cosmetics and health foods. Raw honey, either on its own or in combination with other products, is well known for its healing qualities. These include disinfecting wounds, killing bacteria that cause stomach ulcers and diarrhoea, alleviating symptoms of arthritis and colds, lowering cholesterol levels and boosting immune systems (Krell 1996).

Honey-hunting has traditionally been a male activity, partly because it involves climbing trees, which is not culturally suitable for most rural women. However, women have been able to participate more fully with the development of waist-high beehives (UNDP 2002).³ Development agencies have typically introduced these hives to women through small and often isolated income-generating projects, together with the necessary credit, but without training or

³ From honey-hunting, technology progressed first to traditional hives made of logs, clay, leaves and other locally available materials. The next innovation was Top Bar Hives, which stand on the ground and are made of wood. Finally came movable hives – normally the Longstroth – which are very efficient, but more expensive and difficult to afford without a grant or credit. They also require specialized training.

FIGURE 3
Honey value chain (Uganda)



Source: Nadelman, Silliman and Younge (2005).

market linkages. Such projects have met with mixed results and have limited women's ability to enter the industry in very large numbers. In most countries, women's participation in the bee-keeping industry is significantly lower than in agricultural production.

Figure 3 illustrates a typical honey value chain, based on gender research in Uganda.

Women tend to carry out those steps in the chain that overlap with the activities traditionally assigned to them. For example, they have a high level of participation in apiary management, the duties of which include water retrieval, field clearing, planting and hive and apiary cleaning. These are all tasks that are consistent with the kind of work women do regularly as part of their household responsibilities. Women also participate in first-level processing, which typically takes place within the home using traditional and time-consuming technologies and can be seen as a continuation of their traditional food-processing activities. Men are more likely to do harvesting and advanced processing, which take place outside the home, involve more advanced technologies and related skills and provide greater opportunities for economic gain.

Interventions

The literature on women and bee-keeping shows that there has been a significant move away from the traditional, small income-generating approach. Even where these so-called income-generating projects still exist, they tend to be a component of a larger agriculture or forestry improvement programme. For example, the IFAD-supported Forest Resource Management Project in Zambia has introduced 300 beehives to women in an area in which bee-keeping is traditionally a male enterprise. While such interventions are obviously preferable to isolated projects, they reach relatively small numbers of women (IFAD 2000b).

A more promising trend is that of increased private-sector involvement in bee-keeping. Many private entrepreneurs, strong women leaders and women's bee-keepers' associations have been able to take advantage of a supportive policy environment to respond to a rapid increase in demand for honey and other bee products. In Uganda, the Government has recently implemented both a national apiculture programme and an apiculture export strategy. A number of private and community-based enterprises have benefited from financial and technical



BOX 4

International Centre of Insect Physiology and Ecology (ICIPE)

Over the past decade, IFAD has worked closely with ICIPE to develop a comprehensive programme, from production to marketing, for promoting off-the-shelf technologies. These technologies will assist people living in fragile and remote areas in developing viable alternative income sources, including bee-keeping. With the help of IFAD grants, ICIPE has identified socio-economic constraints on the promotion of improved bee-keeping equipment and has validated low-cost technologies under field conditions in Kenya and Uganda. Approximately 10,000 farmers/bee-keepers and 300 government extension workers have benefited. Four marketing centres have been established that work with traders on local marketing and are currently making efforts to penetrate overseas markets.

The most recent IFAD grant is supporting a value chain approach with these objectives:

- market research to ensure that products meet consumer requirements in quantity and quality
- continuing improvements in and adaptation of technologies to provide a competitive edge to producers through gains in productivity
- validation of the technologies in various agro-ecological zones so as to benefit a larger number of poor people

Steps include examining the possibility of creating a common brand for the products developed (preferably fair-trade certified) and providing quality assurance (International Organization for Standardization (ISO) certified) and organic certification for bee-keeping enterprises in focal areas.

Source: IFAD (2005).

support, as well as from macro-level assistance, such as the setting up of national standards mechanisms, which have gained producers the right to export to the European Union (Carr et al. 2008).

Private companies offer a relatively quick way of linking farmers to markets, but they provide no opportunities to acquire ownership or control of the supply chain. By contrast, community-based organizations and socially owned businesses, although slower in reaching markets, give their members control over their own enterprises while encouraging local innovation.

Between these two approaches is social entrepreneurship, in which an entrepreneur seeks not only profits, but also funds with which to assist farmers through credit and training. An example is Honeycare in Kenya, which a social entrepreneur established in 2000 to reduce poverty and conserve the environment. In addition to raising donor funds for improved hives and other bee-keeping equipment, it runs a microleasing scheme through which farmers pay a deposit for the hives, which then become collateral for a loan. Honeycare takes 25 per cent of honey harvests to repay the loan, which normally takes three to five years. It also provides extension and technical services and buys honey from farmers at a guaranteed, fair-trade price. There are some 20,000 individually owned hives, and about 50 per cent of the suppliers are women. Honeycare is now splitting into two entities – an NGO and a private company. The NGO receives donor funds and focuses on farmers' needs. The private company is self-financing and focuses on brand visibility, product quality, marketing and packaging, exploring export markets and new products (Carr et al. 2008).

There are also interventions that assist large numbers of bee-keepers across countries and regions through research into technical and marketing problems. The International Centre of Insect Physiology and Ecology (ICIPE), with the support of an IFAD grant, has been developing and promoting off-the-shelf technologies for East African bee-keepers and

testing market access for their products (IFAD 2005). The International Centre for Integrated Mountain Development (ICIMOD), also an IFAD grant holder, is developing a gender-sensitive bee-keeping research programme.

Medicinal and aromatic plants

Overview

Globally, Gibb (2007) estimates sales of herbal medicines alone to have exceeded US\$12.5 billion in 1994 and US\$30 billion in 2000. Annual growth rates range from 5 to 15 per cent. In 2000, the Secretariat of the Convention on Biological Diversity reported the world market for herbal medicines, including herbal products and raw materials, at US\$60 billion and forecast it to reach US\$5 trillion by 2050.

Hundreds of thousands of medicinal plant species around the world constitute:

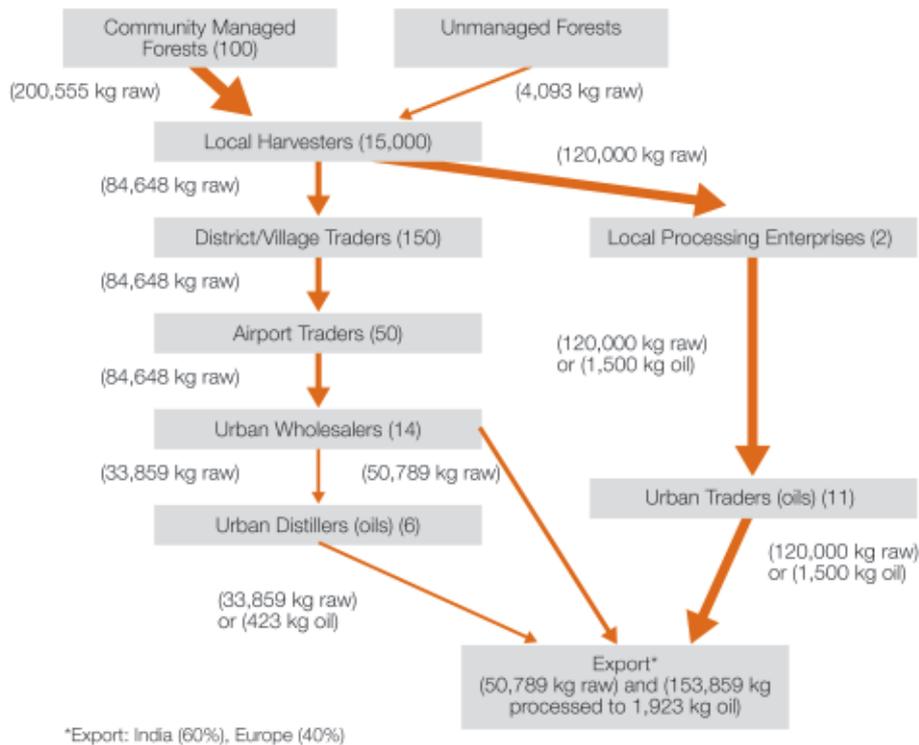
- the basis of health care systems throughout much of the developing world
- a source of compounds on which to base new pharmaceutical products
- a major component of the burgeoning markets for herbal health care remedies and natural products
- a source of income for growers, traders, collectors and manufacturers of plant-based medicines

Unfortunately, some medicinal plants are already in short supply.

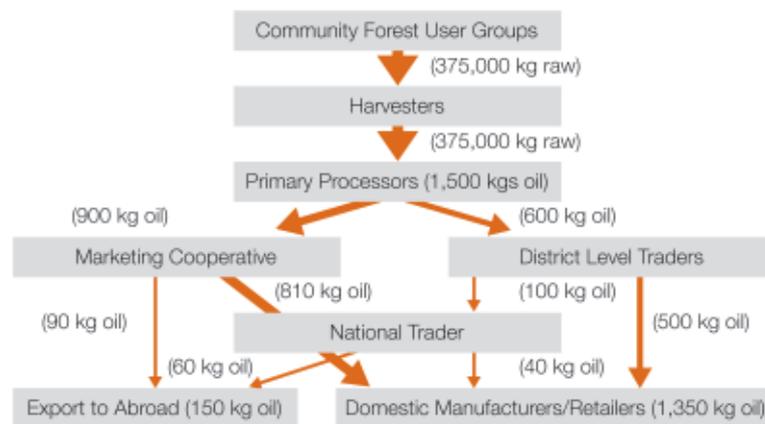
In Europe, the trade structure is complex and dominated by a few wholesalers. In producer countries, diverse types of traders, including local dealers, village cooperatives and district traders, buy plant material from collectors and cultivators. They then pass it on to wholesalers, manufacturers or directly to retailers (figure 4). The wide range of manufacturers includes production of pharmaceuticals, extracts, cosmetics, foods and colouring agents. The length of the trade chains and a perceived need to protect information lead to a lack of transparency.

FIGURE 4
Medicinal and aromatic plant value chain

Physical Flow of Jatamansi (204,648 raw kgs)



Physical Flow of Wintergreen (375,000* raw kgs)



** Wintergreen: 20 kg raw = 1 kg oil
 Source: Field survey, key informant interviews at various levels, and ANSAB documents

Source: Pokharel et al. (2000).

A direct consequence is that people at the start of the chain have little idea of the market value of the medicinal and aromatic plants they are supplying and are unaware of the value added from source to end-use (World Wide Fund for Nature (WWF) 2002).

Medicinal plants are an important source of livelihood for millions of people in developing countries, particularly women, indigenous peoples and very poor people. Traditional knowledge associated with medicinal herbs is a highly gender-specific

BOX 5

Hills Leasehold Forestry and Forage Development Project (HLFFDP)

In 1990, the Government of Nepal and IFAD signed a loan agreement for HLFFDP, with the twin objectives of raising the incomes of hill families living below the poverty line and contributing to improvements in the ecological condition of the hills. A decade later, the development community of Nepal recognized HLFFDP as an innovative, unique project that had had a significant impact on the lives of its group members, especially women, as well as on the environment.

In particular, HLFFDP contributed to an enhanced sense of self-confidence and bargaining power among women participants. It achieved this through the incorporation of gender issues and the targeting of poor women in the strategy and implementation of the project. To overcome the problem of the scarcity of women staff in the Department of Forestry and the line agencies implementing the project, HLFFDP hired women group promoters to organize women's and mixed groups and to train men and women in gender awareness at the grass-roots level. In addition, a team of three women Nepalese technical assistants joined the project coordination unit to develop mechanisms for mainstreaming gender considerations. The team identified gender focal points (mostly men) within the implementing line agencies and developed their gender skills through training, coaching and guidance. These focal points worked closely with the women group promoters.

According to one male focal point, "these group promoters are like our own family. If we had not given them this support, the project would not have been successful. They are our messengers to leasehold communities and help us conduct meetings. Since they have come, the participation of women has increased. Through gender training, we have become aware of women's knowledge and roles in natural resource management."

Source: Gurung and Lama (2002).

activity in most countries. While women tend to be the repositories of indigenous knowledge relating to the uses of medicinal plants, both women and men collect them (Gibb 2007). Women collect plants from forests closer to home and combine this activity with others, such as collecting firewood and fodder. The plants they collect tend to be of lower value and destined for local markets. Men make special trips to more distant locations, including the highest altitudes where higher-value plants are found. These often end up in the more complex value chains related to export markets, and men tend to dominate the trading and exporting functions in these chains (Pokharel et al. 2000).

While demand for medicinal herbs has risen in global markets, inequitable trade practices have meant that only a small portion of the profits trickle down to collectors. Concerns include recognition of

the intellectual property rights of traditional users and biopiracy. Increasingly, scientists and industry are appropriating, adapting and patenting the knowledge of traditional medicine with little or no compensation to its original custodians and without their informed consent. There are two crucial, related concerns:

- People who depend on traditional medicine may lose access to medicinal plants if pharmaceutical companies patent them.
- Over-harvesting of commercially valuable medicinal plants in the wild could result in their extinction, with both health care and livelihood impacts for indigenous and traditional peoples (Gibb 2007).

Although companies and entrepreneurs specialized in the commercializing of NTFPs

continue to exploit local communities, there are some examples of methods that can protect their rights. In 1997, the South African Council for Scientific and Industrial Research (CSIR) licensed a United Kingdom-based company to develop and commercialize an appetite-suppressant drug that CSIR had isolated from hoodia, which has long been used by the San people to ward off hunger. In 2001, media reports led to increased interest in the drug and alerted the San to the potential use and value of their traditional knowledge. This resulted in the South African San Council signing a memorandum of understanding with CSIR, which acknowledged the San as the custodians of their traditional knowledge. CSIR also agreed to share the benefits of commercialization of the new drug. The potential income for the San could exceed US\$7 million annually for the 15-20 years before the CSIR patent expires. It will be deposited in a San hoodia trust for development of the San community (Schreckenber 2003).

Interventions

Overexploitation of several valuable medicinal and aromatic plants has resulted in some governments banning exports of raw materials. In addition to conserving the natural resource base, such policy changes have also promoted local processing and increased employment levels and foreign exchange earnings. In Nepal, forest dwellers used to export over 90 per cent of *jatamansi* (an aromatic plant of the valerian family) in its raw form. Following a change in trade policy, they now process over 75 per cent into oil before export (Pokharel et al. 2000).

Of course, a corresponding increase in financial and technical support for local processing should accompany policy changes. Ideally, it should enable most of the value added to stay within local communities. Transfer of forest resource management to community forest user groups (CFUGs) and investment in local, community-owned distillation units in Nepal has led to

substantial increases in income for indigenous collectors – both women and men. CFUGs also help put collectors on a more equal basis with traders and thus increase their control over the market chain (Pokharel et al. 2000).

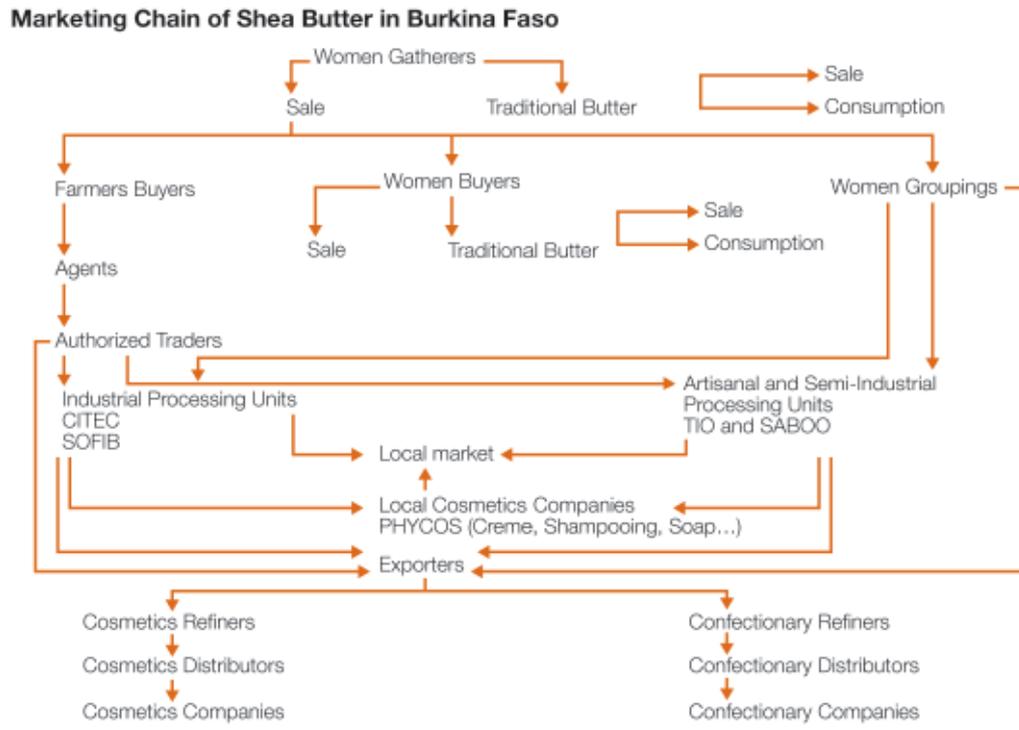
Nepal has effected major policy shifts on exports and on the transfer of ownership of forest resources. When such major shifts take place, it is important that women benefit equally with men. One way to promote this is to ensure that plants gathered or cultivated by women, such as wintergreen, receive as much focus and support from government policies and programmes as those handled by men (Pokharel et al. 2000). Another is to ensure that planners of major forestry programmes involve women fully in all community-level decision-making processes. In Nepal, after finding that women were not well represented in its groups, the federation of CFUGs mounted a major project to ensure gender equity (Bhattarai 2007) – and ICIMOD's Medicinal and Aromatic Plants Programme in Asia (MAPPA) promoted it. Finally, development agencies should incorporate gender issues from the very beginning of all forestry projects and monitor and correct for difficulties in implementation.

Fruits, nuts and seeds

Overview

Indigenous trees are yielding valuable raw materials, primarily for the cosmetics industry. These trees have been harvested sustainably for generations by indigenous and marginalized rural women. The creation of viable, ethical domestic and export markets for these products can add local value and preserve the traditional culture associated with their use. This, in turn, enhances rural women's livelihoods and food security and protects the trees (see the website of PhytoTrade Africa, www.phytotradeafrica.com, the Southern African Natural Products Trade Association headquartered in Harare).

FIGURE 5
Shea butter value chain (Burkina Faso)



Source: Carr et al. (2000).

Tree types include shea, marula, baobab and mongongo. Producers process the fruits in a variety of ways: traditional processing by women using simple technologies; by women's groups using improved technologies; or in more-sophisticated factories using capital-intensive technologies. The end product is an oil or butter that has widespread use locally as a cooking oil, in soap-making and in skin and health care. Users brew some fruits for local consumption and sale, and eat others as a nutritious snack food. They feed the cake left over after pressing to livestock. Few indigenous communities could survive without these multipurpose trees (www.phytotradafrica.com).

Cosmetics industries in Europe, North America and Japan have a high and growing demand for these oils and butters, often met through fair-trade markets. However, they often do final processing in the consumer country to ensure the meeting of proper standards (Bekure et al. 1997). Shea is increasingly being used in chocolate

manufacture in northern countries. Demand has increased, in particular after August 2003, when a new European 'norm' went into effect that allows for the use of up to 5 per cent non-cocoa fats. Women's associations in West Africa that produce shea butter report an increase in orders following the change in regulations (Gordon 2004).

Women who collect the fruits and depend on them for their livelihoods are failing to benefit equitably from these growing markets. As can be seen in figure 5, the production chains are long and complex. They involve a range of processors, traders, exporters, importers, wholesalers, manufacturers and retailers, who rake off much of the profit, leaving women collectors with little or no increase in income. (Figure 5 presents shea butter data from Burkina Faso, but is widely representative of other products and countries.) Governments and development agencies should assist women in increasing their control over the marketing chain and in sharing more widely in the gains of globalization.



Tiengala, Cameroon: Nalahoyo Touré grinds karité nuts to make a nut butter used for cooking and as a cosmetic moisturizer.

© IFAD, C. Nesbitt

Interventions

Given the high visibility of these products in the global marketplace, interventions have been well documented. There are several good examples of how a variety of actors can come together to enable women collectors to take advantage of expanding export markets.

In Namibia, 3,000 women who collect marula seeds have formed a cooperative that is a member of PhytoTrade Africa. The cooperative exports both seed and processed oil to The Body Shop International, which advertises the use of 'community-traded' marula oil in its whole cosmetics range. The Centre for Research-Information-Action in Africa/Southern African Development & Consulting (CRIAA SA-DC), a local NGO, has enabled the cooperative to enter into direct negotiations with The Body Shop. It has also linked cooperative members with local artisans, who have developed appropriate processing equipment in response to members' needs (Schreckenber 2003; www.phytotradafrica.org).

PhytoTrade Africa, which is an IFAD grant holder, has had a number of other success stories in southern Africa. In 2006, almost 30,000 primary producers (93 per cent women) sold raw or value added NTFPs worth US\$340,000 to PhytoTrade Africa members located in seven countries in the region. The network has built robust supply chains, which make possible the delivery of high-quality products to global markets on time and to specification. Its exports are 19 per cent fair-trade certified (PhytoTrade Africa, 2007).

In West Africa, development agencies and the private sector have combined resources to respond to requests from governments for help in developing the shea sector.

In Burkina Faso, 400,000 rural women participate in the harvesting and processing of shea nuts. A joint project of the United Nations Development Fund for Women (UNIFEM) and CECI has introduced improved technologies and international marketing assistance. These activities have led a major cosmetics company (l'Occitane) to

purchase shea butter directly from a network of 100 shea groups. The company also provides training and pays for the butter in advance, thus promoting greater economic security (Harsch 2001).

Gums

Overview

Gums are a type of resin exuded from a variety of trees, partly as the result of natural phenomena and partly from injury to the bark or stem of a tree. They exude in liquid form and, on exposure to air, dry into translucent tears that remain stuck to the bark of the stem or branch, from which collectors can then pluck them. People use gums for a variety of purposes: as adhesives; for clarification of liqueurs; finishing of silk; preparation of quality water colours; in pharmaceuticals, printing inks and the sizing and finishing of textile fabrics and dyeing; in the paint industry; in cosmetics – to bind creams, lotions and ointments; in preparing ice cream, chewing gum and other confectionary items; and in soft drink manufacture (Grams 1998).

There are two major types of gum: arabic and karaya. Both types are primarily for the export market, where a wide range of industries use the semi-processed product to produce finished retail goods. Sudan is the largest supplier of gum arabic and had more than 90 per cent of the world market until the 1970s. The country's leading position has declined in recent years, owing to internal political factors and the development of artificial substitutes (Lacey 2004). India is the world's largest exporter of gum karaya. Exports have declined in volume (although not in value) in recent years, due in large part to a loss of trees because of the widespread use of non-scientific and harmful tapping methods.

The value chains and gender division of labour involved in these two types of gum are quite different. In the Sudan, men are totally responsible for collection of gum arabic,

BOX 6

GCC and the Andhra Pradesh Tribal Development Project (APTDP)

The Girijan Cooperative Corporation Ltd. undertook research on the processing and marketing of forest products collected by tribal peoples. Its initiative on gum *karaya* was a good example of the benefits of combining a concern for tribal people with dissemination of scientific knowledge and professional marketing techniques. Gum *karaya* is the most important NTFP procured by GCC, accounting for about one half of total procurement, and it is a major source of income for almost 12,000 tribal people.

GCC's employing of a pharmaceutical specialist led to the development of scientific tapping and post-harvest practices, modernization of storage and quality control. It engaged nearly 80 consultants and 400-500 liaison workers to train and supervise the collection of gum.

Within two years, the price of grade 1 gum tripled and tribal income rose proportionally. The improved tapping techniques also extended tree life. GCC organizational expansion, facilitated by APTDP, led to the creation of the Commercialization, Research and Development Division, illustrating the importance that GCC assigns to issues related to market linkages.

Source: Government of the Republic of India (2002).

which they then transport over long distances to one of 13 central auction markets, where approved merchants buy it at an agreed price. They deliver the gum to their cleaning sheds, where teams of local girls select and hand-grade it. The merchants then sell the graded gum to the Gum Arabic Company, which is 30 per cent government owned. The company is the sole permitted exporter (Grams 1998).

In India, the system is more decentralized and women participate more in the collection, transport and sale of gum *karaya*. However, the methods of tapping are very primitive, resulting in injuries to both the pickers and the trees. Gum pickers live in some of the most remote parts of the country. Until recently, they worked in isolation, without advice on improved production methods and without information on markets, prices or local legislation on the use of forest products. As a result, while gum *karaya* is a valuable product and a major source of export earnings for the country as a whole, the tribal women and men involved in collection earn a pittance for long, unpleasant hours of work (Mehta 1998). The value chains vary from state to state (figure 6).

Interventions

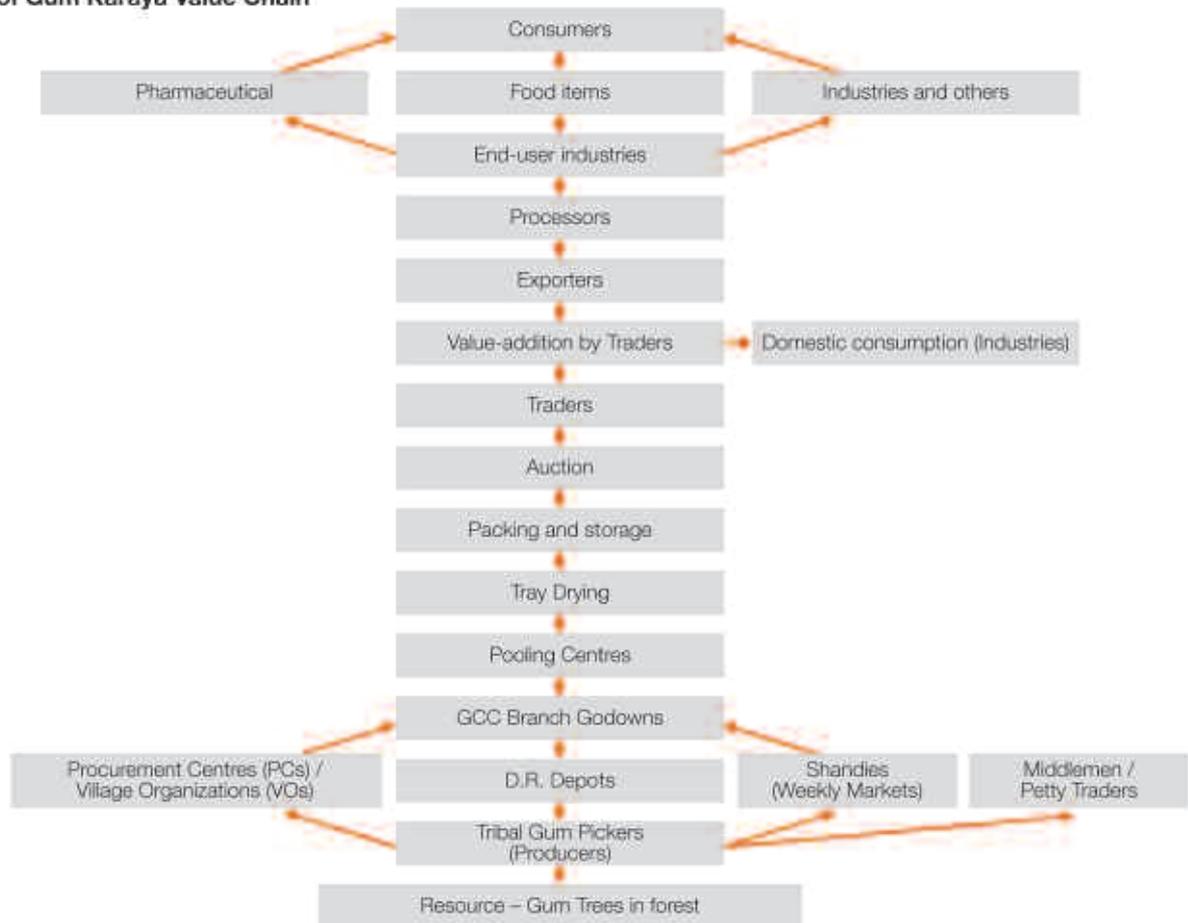
In India, state governments control the collection, sale and marketing of gum, issue collection licenses and buy the gum from licensed collectors.

In Gujarat, thousands of the State's poorest women rely on gum collection for their incomes. Most do not have a collection license and are thus forced to sell to local licensed contractors at a very low price. The Gujarat State Forest Development Corporation Ltd. has allowed prices to vary according to changes in conditions (such as an influx of cheap imports from the Sudan) and has no market linkages or plans. An intervention by the Self-Employed Women's Association (SEWA), a women's union, helped collectors organize into groups. These groups secured collection licenses for their members and were able to negotiate higher selling prices with the forest corporation. Eventually, the women also won the right to sell on the open market, where prices are higher. The women's union is developing more direct market linkages on behalf of the gum collectors (Carr, Chen and Jhabvala 1994; SEWA Academy 2000).



FIGURE 6
Gum karaya value chain (Andhra Pradesh, India)

**Schematic Diagram
of Gum Karaya Value Chain**



Source: International Resources Group (IRG) / Kovel Foundation (2005).

In Andhra Pradesh, on the contrary, thousands of tribal women and men gum collectors have been assisted directly through the Girijan Cooperative Corporation Ltd. (GCC). The State Government set up GCC to procure and market NTFPs, with the assistance of the IFAD-supported Andhra Pradesh Tribal Development Project. GCC's managing director was reluctant to lower prices when the corporation was unable to sell stocks of gum owing to the poor quality of the product. Instead, he looked for scientific solutions to resolve marketing problems through

improving quality. GCC employed young tribal volunteer workers to liaise with gum collectors and scientists to develop and disseminate solutions. As a result, the quality of gum has improved, prices paid by traders and the incomes earned by collectors have increased, and the life span of gum trees has been extended. Because scientists worked with gum collectors on technology development, there has been a beneficial blending of modern and traditional technologies (International Resources Group (IRG) / Kovel Foundation 2005; Mehta 1998).

Members of a women's group in Nepal contribute to environmental conservation.

© IFAD, A. Hossain

Analysis

Global value chains for most NTFPs are highly skewed in the direction of distributors and retailers. Forest dwellers at the collection end of the chain typically receive much less than 10 per cent of the total selling price. As is the case with many other products originating in developing countries, NTFP chains are highly gender specific. Women mostly deal with lower-value products and lower-value activities than men, and do not have the same access to the technology, credit and training needed to redress the balance. However, there are many ways to alter the distribution of returns and power in favour of indigenous communities and the women within them.

To return to the terminology of chapter I, a major objective of gender-sensitive NTFP projects is to increase the income of indigenous women by adding value to their forest resource base. Projects should also enable women to control the subsequent marketing process to benefit on a sustainable basis. In other words, projects need to move women from being 'actors', where they are mere price-takers, to 'co-owners', where they have an equal say in price-setting and marketing with those further down the value chain. Implicit in this approach is the need for women to have control over the use of the resource base.

The following examples demonstrate various ways to achieve this:

- In Nepal, the producers of wintergreen target mainstream European markets. A change in government policy banned the export of raw wintergreen plants, so there is now more processing at the local

level. There has also been investment in local, community-owned distilleries and a gender-sensitive programme to transfer forest resources to user groups. These measures have resulted in significant increases in income and control for the women who have traditionally collected this aromatic plant.

- In Namibia, the producers of marula oil target 'niche' fair-trade markets. Innovations in the supply chain have resulted in a women's cooperative being able to capture 47 per cent of value added, where the norm for primary producers would be less than 10 per cent.
- In Andhra Pradesh, the producers of gum karaya target mass industrial markets. Gum collectors and scientists employed by their associations have developed improved collection and processing technologies that have doubled the incomes of tribal communities and extended the life of the gum trees.

Innovative interventions

Assisting women in capturing a greater proportion of value added in globally marketed NTFPs – and doing so in an institutionally and environmentally sustainable way – will require finding innovative approaches to:

- dealing with resource scarcity
- increasing competitiveness and improving market linkages/access



Regina Amdakoah makes cosmetics at her shop in Techiman, Ghana.

While these tasks are important within the context of local/domestic markets, they become crucial in supplying global markets and require a mix of skills and resources from a range of actors. The range and mix vary from product to product and from place to place:

- Bamboo and rattan: there are examples of NGOs supporting women's self-help groups in collaboration with national and international research institutions.
- Mushrooms/bee products: there are examples of social entrepreneurs, private companies, socially-owned businesses, community enterprises and internationally supported research-and-development programmes linking women gatherers and producers with national and global markets.
- Medicinal and aromatic plants: community forest user groups, community enterprises and local and international research-and-development institutions have enabled women to share in the benefits of growing global markets.
- Fruit, nuts and seeds: women gatherers and processors of marula, shea and other indigenous fruits have been supported by women's unions and associations, the private sector and local and international NGOs.
- Gums: women gum collectors have been assisted directly by state government institutions as well as by collector associations, women's unions and local research-and-development resources.

In addition, national governments and private traders deal with all product groups. Governments have played a major role in formulating policies and programmes in support of women's participation in and benefits from NTFP expansion. These policies and programmes range from bans on the export of raw medicinal plants in Nepal, to prioritization of the shea nut sector in Burkina Faso, and the implementation of an apiculture export strategy in Uganda. Private traders are key links in the value chains of

most NTFPs and especially those destined for export markets.

To better understand the role of these different players in the NTFP commercialization process, it is useful to examine them in the light of:

- resource scarcity
- competitiveness/market access

Resource scarcity

There are two major approaches to addressing resource scarcity (where it is an issue): through better resource management and/or through domestication. Governments have a major role to play in both approaches. In the case of **natural resource management**, governments can ban the export of raw materials, as has happened with bamboo and rattan and with medicinal and aromatic plants. They can also introduce licenses for forest product collection, as is common with bamboo and rattan, certain types of mushrooms, medicinal plants and gum karaya. While these measures protect the resource base and shield local communities from intruders, they are not without their problems. In Mexico, indigenous communities needed an environmental impact assessment before being allowed to collect certain types of mushrooms. This would have been beyond their means without assistance from an outside NGO. In Gujarat, women gum collectors were not informed about legislation, and would have been unable to obtain collection licenses without assistance from a women's union.

In addition to policy, governments play a role in natural resource management through the implementation of large forest resource management programmes. Such programmes are not always gender sensitive. The HLFFDP experience in Nepal demonstrates that ensuring gender sensitivity is not easy, but that it is worth persevering for the eventual project output.

Actors other than governments have a role to play in improved natural resource management, particularly in finding innovative technological solutions to

minimize ecological damage. The most obvious example of this is gum karaya in Andhra Pradesh. Local scientists working with collectors have developed and introduced improved techniques that extend the life of gum trees by up to 20 years. In Africa, engineers have developed or adapted processing technologies that have opened up lucrative markets for seed oils and, by increasing the income potential of fruit trees, have made it less likely that these will be cut down for firewood.

In the case of **domestication**, government policy can encourage or dissuade investment in private plantations of bamboo and rattan or medicinal and aromatic plants. However, if the elites are not to capture the benefits, poorer users need to participate in domestication (Leakey, Schreckenberg and Tchoundjieu 2003). Technological innovation and adaptation also have a role to play. Research and development are enabling the domestic cultivation of valuable species of mushrooms that previously could only be found in the wild, and local and international scientists are developing techniques to grow these mushrooms in new countries. A good example of technology-driven domestication is the development of hives that allow the keeping of bees in any location required, including where they can do the most good in pollinating important food crops.

An IFAD-supported tree domestication programme by the World Agroforestry Centre (ICRAF) has helped thousands of farmers in Cameroon, the Democratic Republic of the Congo, Equatorial Guinea, Gabon and Nigeria integrate high-value indigenous trees, including safou (African plum), into their farming systems, while preserving local biodiversity. Moreover, tree planting has stabilized fragile ecosystems such as hillsides, reducing the risk of landslides, and has enhanced soil fertility through fruits and leaves.

Competitiveness/market access

The process of supplying local markets has continued in much the same way for

generations. However, moving to the supply of sophisticated national and international markets requires major changes. Some type of process upgrading is usually necessary to improve quality and meet international standards. It may also be necessary to take on new functions such as marketing, with the associated need to establish a brand name or achieve certification. The opening up of global markets offers new economic opportunities that demand new skills in identifying and diversifying into new products.

Government policy has a major role in ensuring an economic environment conducive to investment and innovation. Governments also have an important role in providing institutions and infrastructure to support such investment and innovation. For example, they can offer business development services, national monitoring services, training resources, public-sector research and export promotion boards. One good example of a package of government services to promote growth in output and exports of a specific NTFP is that of bee-keeping in Uganda: the national strategy promotes public/private partnerships and development of the industry through the private sector.

Entrepreneurship, which drives the innovation process, comes largely from the private/civil society sector, with backing from international research-and-development institutions and development agencies. Private entrepreneurs, private traders, social entrepreneurs, leaders of producer associations, and, less often, NGO staff tend to be the social vehicles of technological innovation. On occasion, entrepreneurship is also found in more surprising places as, for example, the managing director of the state NTFP agency in Andhra Pradesh.

Clearly, there is an amazing amount of innovation taking place in linking indigenous women with domestic supermarkets and global markets.

In the case of **technology**, while the private sector tends to buy commercial equipment (often imported), community-based organizations and social enterprises

have innovated at the local level. They have come up with technologies that are low cost, use local materials and do not depend on imported spare parts or need sophisticated skills to maintain and repair them. Sometimes they build on indigenous technical knowledge, and they always draw on local technical skills and incorporate a mutually beneficial dialogue between artisan and user.

Several of the bee-keeper associations in Uganda have adapted improved beehives to lower the cost of production and incorporate features such as pest control. Others have developed technologies that enable the poorest bee-keepers to diversify into higher-value products. Although bee-keepers can draw on research and development undertaken by regional research institutions such as ICIPE, they are also very capable of innovating on their own behalf and their efforts in this respect deserve recognition and support.

In the case of **credit**, private companies and social entrepreneurs have introduced innovative and successful user-friendly schemes. These work in situations in which microfinance options exist but fail to meet producers' needs and circumstances. In Uganda, the private company Bee Natural Products gives credit to every registered farmer/supplier. This is repayable over a four-year period from honey harvests. Unlike many microcredit schemes, the company recognizes that it takes some time before a hive can be harvested, and it schedules repayments accordingly. In Kenya, the social enterprise Honeycare has introduced microleasing schemes as opposed to microfinance. Incorporation of such financing options in NTFP projects is crucial to their success. Also important is the concept of payment of guaranteed prices on (or before) delivery. In Burkina Faso, advance payment from l'Occitane to women shea groups has promoted economic security, whereas in Namibia, lengthy delays in payment from The Body Shop to women marula oil producers have had the opposite effect.

There have also been innovations in **market access** through collaboration with international networks and research centres such as INBAR, ICIPE and PhytoTrade Africa.

INBAR's programme of development and diffusion of technologies for smallholder producers emphasizes improved product and market development. Its work with incense sticks and cane baskets in India incorporates innovative ideas, such as selling under a brand name to obtain and maintain market visibility.

ICIPE's programme of bee-keeping technologies in East Africa incorporates research on market linkages in collaboration with private traders. The programme is examining the possibility of creating a common brand for the products developed (preferably fair-trade certified), as well as providing quality assurance (ISO certified) and organic certification for bee-keeping enterprises.

PhytoTrade Africa is a member of the International Fair Trade Association (IFAT) and assists its members in linking with global markets by requiring that they sign on to a collective Fair Trade Charter. Such assistance is obviously crucial in situations where the aim is to provide rural women with access to speciality niche markets – which is so often the case with NTFPs – and where costly and complicated certification schemes exist.

Organizing

With the exception of private companies, which source mainly from individual women and men suppliers, the organizing of indigenous women producers has formed the basis for the success of most NTFP initiatives and interventions. Whether they are self-help groups of incense stick rollers, associations of bee-keepers, community forestry user groups, women's marula oil producer cooperatives, networks of women shea butter groups, or gum collectors' associations, effective horizontal organizing has been instrumental in bringing about initial gains in income for

rural women and in helping them maintain long-term, sustained benefits.

Effective organizing facilitates women's access to resources and increases their voice, bargaining power and self-reliance. Given the remote locations and relative isolation, organizing presents special challenges and requires special attention.

Conclusions

Spreading the gains of globalization to those communities that depend on forest products for their livelihoods and well-being is a major challenge for policymakers and development practitioners. Isolation and the usually low educational level of forest dwellers, and especially women, creates an uneven balance of returns and power within the global value chains into which they are increasingly integrated. However, significant new economic opportunities are opening up for these communities. And a range of strategies can help communities take advantage of these opportunities.

There is no one recipe for success. Different strategies work in different locations and cultures and for different products within locations. Thus designers will need to plan interventions that help women increase their incomes from their forest resource base on a site- and product-specific basis – and in consultation with the women themselves. There are, however, some general guidelines that apply to most interventions.

First, no one agency or individual can improve the position of women within global value chains. Because of the complex nature of these chains, one agency may take the lead in implementation, but it will need to draw on the resources and expertise of many other agencies and individuals to bring about positive change. A significant trend is that of public/private partnerships in which governments provide training and capacity-building, while the private sector provides marketing and business development. Combining social issues with profitability

and competition in global markets is not something that has been undertaken successfully by government agencies or NGOs working in isolation. Success is more likely if each agency takes responsibility for what it does best and then unites its resources with others.

Second, interventions can successfully assist individual gatherers and collectors only if these organize in some way – in groups, associations, cooperatives or unions, or through links with private/social companies through outsourcing arrangements. When they form their own organizations, rural women are better able to access credit, technology, training and markets. They are also better able to voice their needs and to increase their bargaining power within the value chain. Federations of groups or associations give individual members more voice and bargaining power than single groups and associations, and governments and donors should support and strengthen them. Organizing does not eliminate the need for intermediaries within the value chains and their role remains a key one. But it does put gatherers and collectors on a more level playing field for price-setting and profit-sharing.

Third, while increased demand for forest products can be the basis for increased incomes in the short run, it can lead to depletion of the natural resource base if the actors do not take measures to manage it. Governments have a major role to play in this respect, both in banning the export of raw materials and in issuing collection permits. Banning the export of raw materials is more likely to benefit forest communities if accompanied by support for decentralized, small-scale and community-owned processing facilities. Issuing collection permits is more likely to work as part of a larger strategy to transfer management of forest resources to forest communities and user groups.

Fourth, while development strategies often take production technologies as a given, it is important that governments and development agencies facilitate the design,

adaptation and dissemination of improved technologies that are in line with the needs of gatherers/harvesters. While research-and-development institutions play an important role, they need to recognize and support the innovative capacity of local artisans and gatherers. This capacity adds to the pool of alternative technologies for increasing quality and output and diversifying into new products. Although not normally thought of as 'technicians', women actively contribute to technological innovation and dissemination – either directly or through passing on their ideas to local artisans. Local innovations often rely on local resources, which eliminates the need for expensive imports and long waits for imported spare parts. Moreover, local users and artisans can maintain and repair them more easily.

Fifth, while credit is a necessary input, especially for technology-based enterprises, designers and participants should put more thought into matching delivery systems to the specific needs and circumstances of gatherers/harvesters. There are several examples of user-friendly credit schemes that go beyond the boundaries of normal microcredit programmes. Some of these take into consideration the time lapse between investment and yields, and also allow for repayment directly from sales of products. Innovative credit schemes are particularly important for women, who face greater barriers than men in being able to finance technology-based enterprises.

Sixth, some form of intermediary will always be necessary in linking women gatherers/harvesters with global markets. However, development agencies should support those strategies that enable women to have more control over the marketing process and a greater share in its profits. At the supply end, organizing into associations or cooperatives is very effective. At the demand end, the efforts of fair and ethical trade organizations are proving invaluable in opening up markets for various NTFPs and in simultaneously empowering the women and men who collect or harvest the raw materials

involved. Although they are expanding rapidly, fair and ethical trade markets are still quite small and require more support.

Finally, while both men and women in forest communities face constraints in obtaining the benefits of globalization, the constraints women face are much greater for a variety of social and cultural reasons. Some interventions, such as major forest resource management programmes and national export promotion strategies, require the integration of special measures to ensure that women benefit equally with men. Other interventions tackle gender issues by focusing specifically on projects for women and can be effective on a small scale. But they require more thought and resources in terms of scaling up, so as to benefit women on a wider basis. Often, both strategies need to be pursued simultaneously.

A young mother in Lekie-Assi, Cameroon, cracks cocoa pods to extract the meat.

© IFAD, P. Maitre



Bibliography

- Arnold, J.E.A, and M. Ruis Perez. 1998. Role of non-timber forest production in conservation and development. In *Incomes from the forest: methods for the development and conservation of forest products for local communities*, edited by Eva Wollenberg and Andrew Ingles. Bogor, Indonesia: CIFOR.
- Bekure, Z., M. Donlan, Y. Gordon and J. Thomson. 1997. *Local to global: the international market for shea butter*. New York: UNIFEM.
- Belcher, B., and K. Schreckenberg. 2003. NTFP commercialisation – a reality check. Keynote paper presented at the side session on Non-Timber Forest Products of the 12th World Forestry Congress, Quebec City, 21-28 September 2003.
- Belcher, B., and K. Schreckenberg. 2007. Commercialization of non-timber forest products – a reality check. *Development Policy Review* 25, No. 3.
- Bhattarai, N. 2007. *Case study: Conservation of medicinal and aromatic plants (maps) for sustainable livelihoods in Nepal*. Kathmandu: ICIMOD.
- Carr, M., and M. Chen. 2002. Globalization and the informal economy: how trade and investment impact on the working poor. Working Paper on the Informal Economy No. 1. Geneva: ILO.
- Carr, M., and M. Chen. 2004. Globalization, social exclusion and gender. *International Labour Review* 143, No. 1/2.
- Carr, M., M. Chen and R. Jhabvala, eds. 1994. *Speaking out: women's economic empowerment in South Asia*. New Delhi: IT Publications, London and Sage.
- Carr, M., M. Chen and J. Tate. 2000. Globalization and home-based workers. *Feminist Economics* 6, No. 3.
- Carr, M., R. Nadelman, S. Silliman and D. Younge. 2008. *Women, honey and money: women's role in the expansion of the apiculture industry in Uganda*. New York: SEEDS, The New School Graduate Program in International Affairs, forthcoming.
- Chandrasekharan, D. 1998. NTFPs, institutions and income generation in Nepal. Discussion Paper Series No. MNR 98/1. Kathmandu: ICIMOD.
- Chen, Y.L. 2004. Song rong: Good fortune and fertility from a fungus. In *Riches of the forest: food, spices, crafts and resins of Asia*, edited by C. Lopez and P. Shanley. Bogor, Indonesia: CIFOR.
- Gibb, H. 2007. Gender dimensions of intellectual property and traditional medicinal knowledge. Background study for the Gender and Trade Policy Paper prepared for UNDP. Asia-Pacific Trade and Investment Initiative, UNDP Asia-Pacific Regional Centre, Colombo, Sri Lanka.
- Gordon, C. 2004. *News: The new taste of chocolate in Europe*, www.newworldchocolatesociety.com/index/php/nwcs/comments/news-eurochoctaste.
- Government of the Republic of India. 2002. *Completion evaluation, Andhra Pradesh Tribal Development Project: executive summary and agreement at completion point*. Rome: Evaluation Committee, IFAD.
- Grams, J. 1998. Women's role in the international market for gum: summary of findings, unpublished report. New York: UNIFEM.
- Gurung, J.D., and K. Lama. 2002. *Empowered women and the men behind them: A study of change within the Hills Leasehold Forestry and Forage Development Project in Nepal*. Rome: IFAD.
- Harsch, E. 2001. Making trade work for poor women. *Africa Recovery* 15, No. 4: 1-16.
- Hyman, E.L. 1996. Technology and the organization of production, processing and marketing of non-timber forest products. In *Current issues in non-timber forest products research*, edited by M. Ruiz Perez and J.E.M. Arnold. Proceedings of the workshop Research on NTFPs, Zimbabwe. Bogor, Indonesia: CIFOR; London: Overseas Development Agency (ODA).

- IFAD. 2000a. Report and Recommendation of the President to the Executive Board on a Proposed Technical Assistance Grant for Agricultural Research and Training by a Non-CGIAR-Supported International Centre: International Network for Bamboo and Rattan (INBAR): Development and diffusion of technologies for smallholder bamboo- and rattan-based producers – phase II. Rome.
- IFAD. 2000b. IFAD's Gender Strengthening Programme in Eastern and Southern Africa: Field diagnostic study, Zambia. Rome, www.ifad.org/genderpf/pdf/zambia.pdf.
- IFAD. 2004. Enhancing the role of indigenous women in sustainable development: IFAD experience with indigenous women in Latin America and Asia. Third Session of the Permanent Forum on Indigenous Issues. Rome.
- IFAD. 2005. Report and Recommendation of the President to the Executive Board on Proposed Grants under the Global/Regional Grants Window to Non-CGIAR-Supported International Centres: International Centre of Insect Physiology and Ecology (ICIPE): Programme for the development of sericulture and apiculture products for the poor in fragile ecosystems using the value chain approach. Rome.
- IFAD. 2006. *Success story – Flores*. Voices from the Field. Report of the Completion Workshop for the Technical Assistance Programme on Gender Mainstreaming in Central and Eastern Europe and the Newly Independent States: a community-driven approach, Bosnia and Herzegovina, 11-14 July 2006. Rome, www.ifad.org/english/gender/cen/report/index.htm.
- ILO. 2002. *Women and men in the informal economy: A statistical picture*. Geneva.
- INBAR. 2005. *A basketful of hope: An awakening in rural Tripura*. Information material from the INBAR Programme for Enhanced Bamboo- and Rattan-based Smallholder Livelihood Opportunities. Beijing.
- International Resources Group (IRG) / Asia Network for Sustainable Agriculture and Bioresources (ANSAB) / EnterpriseWorks/VITA. 2000. *A case study of jatamansi and wintergreen value chains in Nepal*, by B. Pokharel, M. Subedi, I.B. Sapkota, B. Subedi. FRAME Series on the Role of Natural Products in Resource Management, Poverty Alleviation and Good Governance. Washington D.C.: US Agency for International Development.
- International Resources Group (IRG) / EnterpriseWorks/VITA. 2006. *Philippines rattan value chain study*. Washington D.C.: US Agency for International Development.
- International Resources Group (IRG) / Kovel Foundation (2005) *Report on the gum karaya sub-sector in Andhra Pradesh, India*. Washington D.C.: US Agency for International Development.
- Kaplinsky, R., and M. Morris. 2001. *A handbook for value chain research*. Brighton, UK: IDS, University of Sussex; Ottawa, Ontario: IDRC.
- Krell, R. 1996. *Value added products from beekeeping*. Agricultural Services Bulletin No. 124. Rome: FAO.
- Kumar, A., and S. Reza. 2007. *A pathway out of poverty: Production of bamboo incense sticks (agarbatti) as a livelihood option for rural women*. Bangalore, India: INBAR-CIBART Documentation Centre, Centre for Indian Bamboo Resource and Technology.
- Lacey, M.A. 2004. Tree that supported Sudan becomes a war's latest victim. *New York Times*, 15 May.
- Leakey, R.R.B., K. Schreckenberg and Z. Tchoundjieu. The participatory domestication of West African indigenous fruits. *International Forestry Review* 5, No. 1.
- Marshall, E., K. Schreckenberg and A.C. Newton, eds. 2006. *Commercialization of non-timber forest products: factors influencing success*. Nairobi: UNEP/WCMC.
- McGrath, P. 2003. Water hyacinth spawns mushroom enterprise. *New Agriculturalist* online, 1 May.
- Mehta, A.K. 1998. *Sustainable interventions for poverty alleviation: A best practice case of gum karaya in Andhra Pradesh, India*. New Delhi: UNIFEM.
- Nadelman, R., S. Silliman and D. Younge. 2005. *Report on Women and Beekeeping: Opportunities and Challenges in Uganda*. New York: SEEDS, The New School Graduate Program in International Affairs.
- Non-Wood News 13* (April 2006). Rome: FAO.
- Non-Wood News 14* (January 2007). Rome: FAO.

- PhytoTrade Africa. 2007. *A report of the impacts and achievements during 2006 of the Southern African Trade Association*. Harare.
- Rao, I.V.R., B. Motukuri and S. Karpe. 2008. *Rural livelihoods development in Konkan, Maharashtra, with bamboo: An analysis of results and outcomes*. Bangalore, India: INBAR-CIBART Documentation Centre, Centre for Indian Bamboo Resource and Technology.
- Royal Tropical Institute (KIT). 2006. *Chain empowerment – supporting African farmers to develop markets*. Amsterdam.
- Sastry, C.B. 2005. Rattan in the 21st century – an overview. *Unasylva* (FAO) No. 205.
- Schreckenberg, K. 2004. The contribution of shea butter to local livelihoods in Benin. In *Forest products, livelihoods and conservation: Case studies of non-timber forest product systems*, edited by T. Sunderland and O. Ndoye. Vol. 2. Bogor, Indonesia: CIFOR.
- Schreckenberg, K. 2003. Appropriate ownership models for natural product-based small and medium enterprises in Namibia. Report prepared for Namibian Ministry of Trade and Industry. Windhoek.
- Schreckenberg, K., E. Marshall, A. Newton, D.W. te Velde, J. Rushton and F. Edouard. 2006. *Commercialisation of non-timber forest products: What determines success?* Forestry Briefing No. 10. London: Overseas Development Institute (ODI).
- Shackleton, S., P. Dhanley and O. Ndoye. 2007. Invisible but viable: recognizing local markets for non-timber forest products. *International Forestry Review* 9 No. 3.
- SEWA Academy. 2000. *The gum collectors: Struggling to survive in the dry areas of Banaskantha*. Ahmedabad, India: SEWA.
- Uganda Export Promotion Board. 2005. *Apiculture export strategy*. Geneva: International Trade Centre (ITC); Kampala: UEPB.
- UNDP. 2002. *Bee-fair – Kenya*. Equator Initiative, Hands-On, Series 3. New York.
- UNDP. 2004. *UNDP Newsfront* (May).
- WWF. 2002. *Trade in medicinal and aromatic plants*. Fact Sheet No. 4. Gland, Switzerland.
- Yang, E., and Y. Sucuiwei. 2004. A gender assessment study on bamboo-based rural development and utilization activities – case study in Yunnan, China. Working Paper No. 53. Beijing: INBAR.

Useful Links:

- Food and Agriculture Organization
www.fao.org
- International Centre of Insect Physiology and Ecology
www.icipe.org
- International Centre for Integrated Mountain Development
www.icimod.org
- International Fund for Agricultural Development
www.ifad.org
- International Network for Bamboo and Rattan
www.inbar.org
- Medicinal and Aromatic Plants Programme in Asia
<http://mappa-asia.org/>
- PhytoTrade Africa
www.phytotradafrica.com
- Gender Mainstreaming Programme for Central, Eastern Europe and Newly Independent States
www.ifad.org/english/gender/cen/index.htm
- SEWA Academy
www.sewaresearch.org

Contacts

Annina Lubbock

Senior Technical Adviser
Gender and Poverty Targeting
IFAD
E-mail: a.lubbock@ifad.org

Sheila Mwanundu

Senior Technical Adviser
Environment and Natural Resource Management
IFAD
E-mail: s.mwanundu@ifad.org

Maria Hartl

Technical Adviser
Gender and Social Equity
IFAD
E-mail: m.hartl@ifad.org

Ilaria Firmian

Associate Technical Advisor
Environment and Natural Resource Management
IFAD
E-mail: i.firmian@ifad.org

Links

<http://www.ifad.org/gender/index.htm>



International Fund for
Agricultural Development
Via Paolo di Dono, 44
00142 Rome, Italy
Telephone: +39 06 54591
Facsimile: +39 06 5043463
E-mail: ifad@ifad.org
www.ifad.org
www.ruralpovertyportal.org