

Eco-certification of non-timber forest products in China: addressing income generation and biodiversity conservation needs

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Abstract: Non-timber forest products (NTFPs) can play a key role in sustainable rural development due to their ability to support rural livelihoods while contributing to environmental objectives, including biodiversity conservation. However, systematic understanding of their role and potential in conservation and development remains weak. Studies have pointed to important knowledge gaps that may lead to serious exploitation and unsustainable use of the natural resource "NTFP" in China, such as (1) lack of basic knowledge on germplasm and non-existing or incomplete inventory, (2) no in-depth and long-term monitoring and institutional arrangements to ascertain sustainable extraction levels, (3) insufficient market transparency for communities, (4) incomplete knowledge of NTFP domestication and its effects on product quality and price and the conservation of wild sources, and (5) no existing research on the full length of the commodity chain for major non-timber forest products and the various actors in the chain. This paper presents initiatives toward balancing poverty reduction and biodiversity conservation goals in China's remote mountain regions through the sustainable management of NTFPs. The potential and challenges of organic, ecological and Fairtrade certification schemes in the context of smallholder farmers are discussed in more detail.

Keywords: Biodiversity; Eco-certification; Fairtrade; Non-timber forest products; Yunnan

1. Introduction

Non-timber forest products (NTFPs) are defined as goods of biological origin other than wood, derived from forests, other wooded land and trees outside forests^[1]; they include products used as food and food additives (edible nuts, mushrooms, fruits, herbs, spices and condiments, aromatic plants, game), fibers (used in construction, furniture, clothing or utensils), resins, gums, and plant and animal products used for medicinal, cosmetic or cultural purposes^[2]. Despite more than a decade of research, systematic understanding of the role and potential of NTFPs in conservation and development (i.e. how to enlarge its benefits for rural communities and the environment) remains weak. This is especially true for China where research and development efforts have just recently

started addressing the issue of sustainable utilization of NTFPs, even though it may be the leading country in the world in terms of processing and trading NTFPs.

Non-timber forest products have long been an important component of the livelihood strategies of people living in or adjacent to forest areas. Several million households worldwide depend heavily on these renewable resources for subsistence and/or cash income, and the FAO estimated that 80% of the population of the developing world use NTFPs to meet some of their health and nutritional needs^[2]. However, NTFPs are seldom the primary source of household income, since their supply is largely seasonal. While over 150 NTFPs worldwide have been identified as significant commodity in international trade (the most important tropical products are rattan, brazil nuts, gum arabic, bamboo and spices) it is more difficult to quantify national trade, which may be very substantial^[3]. This is also true for China where NTFPs normally do not enter official government statistics. An exception is some high-value products that are exported, such as the Matsutake mushroom.

NTFPs have attracted considerable interest as

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a component of sustainable development initiatives in recent years due to their ability to support and improve rural livelihoods while contributing to environmental objectives, including biodiversity conservation. The eco-friendly and people-friendly connotations associated with NTFPs have supported some products to fill in a niche in international trade, such as the small, but rapidly growing Fairtrade market. However, despite this positive image, there is no guarantee of a beneficial outcome and the utilization of NTFPs requires the same measure of planning and control that is required for timber in order to be sustainable. Decisive factors in the sustainable use of NTFPs include government involvement, the ability of local people to claim and enforce use rights (NTFPs are in most cases openly accessible), market transparency and access, and pressure on the resource^[3].

Higher value is often associated with higher harvest levels and more intensive management. Unlike the larger number of less valuable NTFPs, those with a high market value are often not harvested in a benign way, and many are lost to the poor as other stakeholders take over control. An example from Southwest China is the case of *Taxus wallichiana*, a tree species whose bark is used to extract an active ingredient against cancer. Maximizing the harvest by stripping off as much bark as possible kills the trees and has terminated the resource in a short period of time.

Domestication of NTFPs can be a way to intensify production (through higher yields, improved and/or more consistent quality, and control over timing of harvest), secure producer rights and reduce pressure on wild resources. Its risks are that domestication of products originally harvested from the wild can lead to genetic homogenization, reduce the economic value of wild systems (up to the point where natural forest land is being cleared to grow domesticated NTFPs on a larger scale) and lead to transfer of benefits from one group of stakeholders to another^[4].

In China, products from natural and planted forests play an important role in the household economy, especially in the more remote mountain area in the southwest of the country that lacks other business opportunities. With the enforcement of a strict logging ban in 2000 on all natural forests and the gradual conversion of land above 25 degrees of slope from annual into tree crops under the Sloping Land Con-

version Program (SLCP), many upland communities have lost a significant income source (from timber). Many upland households have substituted this loss by intensifying the collection of NTFPs from natural and planted forests. This has led to a severe decline of some products and, thus, poses an increasing threat to biodiversity. As most collectors of NTFPs lack basic market knowledge and rely on traders to sell their produce, they only earn a small income from NTFPs. One of the potential solutions that can benefit and bridge economic and environmental goals is product certification under organic, Fairtrade or sustainable forest management schemes. NTFPs that can be dried, further processed and stored, such as nuts, medicinal plants and mushrooms for example, may be particularly suited since distance to markets poses a serious logistical challenge. At present, the relatively wealthier consumers of certified products are only found in the big cities in the east of the country or abroad.

The objectives of this paper are to review the major knowledge gaps and present initial research and development initiatives related to the natural resource "NTFP" in mountainous Southwest China. More specifically, the paper aims to evaluate and discuss the potential and constraints of certification for the sustainable management of NTFPs and for improving incomes among some of the poorest upland communities in China.

The paper does not aim to offer a detailed literature review of the topic, but rather provide a base for discussion. Information presented in this paper from literature reviews is limited largely to the English literature and focuses mainly on Yunnan Province. Research on the commodity chains of some of the most important NTFPs in Yunnan Province is ongoing. So are development efforts to build capacity among upland communities and development facilitators to explore and implement smallholder group certification for organic, fair and sustainable management of valuable natural non-timber forest resources.

2. Yunnan: a global biodiversity and NTFP-"hot-spot"

The rich varieties of non-timber forest products in Southwest China, many of which have been used by people for centuries, have been well-documented

in Pei ^[5,6], and Zu and Jiang ^[7] to name just a few. Zu and Jiang point out that more than 6,000 plant species growing in China are being used for medicinal purposes, among which more than eighty% grow wild in the forest. However, the fast process of modernization, urbanization and globalization (and associated climatic changes) not only increasingly adds more entries to the list of extinct species (i.e. rapidly reduces biodiversity), but also leads to the gradual and irretrievable loss of indigenous knowledge on the uses of medicinal plants and other NTFPs. Despite the rich knowledge on medicinal plants for example, past research and development efforts have rarely thought of setting up an inventory and monitoring system, nor have they addressed management issues related to these and other NTFPs in China.

Among the many non-timber forest products that are being extracted by rural households from natural and planted forests and plantations in the mountains of Yunnan Province, mushrooms and medicinal plants (both in many species and varieties), as well as walnuts, pine nuts, wild vegetables, eucalyptus oil and honey play an important role in the household economy. Examples exist for institutional arrangements aimed at the sustainable utilization of NTFPs in communal forests for those products that are valuable (and thus threatened by over-exploitation), such as Matsutake mushroom. These are good examples to learn from and improve upon and as emphasized in FAO's State of the World's Forests ^[8]: "If benefits are to be provided on a sustainable basis to local communities and to countries at large, more effective controls may be required to maintain populations of NTFPs at productive levels. The means to accomplish this will vary, but they must be built on sound economic and ecological principles, and often on traditional institutions".

Since enacting a logging ban in all natural forests in China under the Natural Forest Protection Program (NFPP) in 2000 people that traditionally use forest products (i.e. wood and non-timber products) for subsistence and income needs, have seen their resource base diminish substantially. The Sloping Land Conversion Program (SCLP; started in 1998) has further reduced upland farmers' production options as SLCP land cannot be used to grow other crops in-between the trees, even when trees are young and leave plenty of space for intercrops. Since the use of NTFPs in

natural or planted forests is normally not restricted, they have been increasingly exploited to compensate for those production losses without a long-term view towards their sustainable use.

Northwestern Yunnan has become of particular research interest in recent years because the mountain watersheds harbor great biological and cultural diversity, and is one of just a few places on earth recognized as both a Global Biodiversity Hotspot ^[9] and Global 200 Priority Ecoregion ^[10]. The area was declared a World Natural and Cultural Heritage site by the United Nations Educational, Scientific, and Cultural Organization (UNESCO) in 2003 (see <http://whc.unesco.org/en/list>). Northwest Yunnan (an area covering almost 70,000km², with an elevation ranging from below 1,000m up to 6,700m above sea level) is the home to more than 15 officially-recognized ethnic groups. These groups pursue complex livelihoods – based on a wealth of knowledge, beliefs, and institutions – that maintain the region's diverse landscapes and natural resources. Forests account for more than 60% of the land area of northwest Yunnan, and provide crucial economic and ecological services, including wildlife habitat, water retention and regulation, and soil erosion control.

Based on case studies conducted in northwestern Yunnan, Xu and Wilkes ^[11] conclude that biodiversity loss in the region is mainly driven by land use and land cover change and that market driven loss is currently a major threat, especially for NTFPs. Cross-border trade with the southeast Asian neighbors plays a significant role. Xu and Wilkes observe this as indicative of what is occurring in many global biodiversity hotspots. They point out that market information is primarily supplied by outsiders who engage in collection or procurement of local produce and who are unconcerned about sustainability of harvesting. However, buyers and traders are in many cases the only link for rural communities (especially in remote areas) to the market. Xu and Wilkes also point out that NTFPs are liable to agricultural product tax, but enforcement has been difficult.

The Kunming Institute of Botany (KIB), China's leading institution in the fields of biodiversity and ethnobotany in China, has recently intensified its applied research work in partnership with the World Agroforestry Center (ICRAF). In 2004, ICRAF and KIB jointly founded the Center for Mountain Ecosys-

tem Studies (CMES) to collectively work towards understanding the causes and effects of past and current landuse changes in biologically and culturally diverse mountain areas in Southwest China. Joint research has been conducted in northwest Yunnan that aims to generate concrete recommendations for development and policy on improved community-centered natural resource management.

Studies conducted by KIB, ICRAF and partners point to important knowledge gaps that may lead to serious exploitation and unsustainable use of the natural resource "NTFP", such as

- lack of basic knowledge on germplasm and non-existing or incomplete inventory,
- no in-depth and long-term monitoring and institutional arrangements to ascertain sustainable extraction levels of major NTFPs,
- insufficient market transparency for communities (in terms of quality, price, markets for NTFPs),
- only general, superficial knowledge of NTFP domestication and little understanding of the effects of domestication on product quality and price and the conservation of wild sources,
- no existing research on the full length of the commodity chain for major non-timber forest products and the various actors in the chain.

3. Toward improved NTFP management in northwest Yunnan

The two most important on-going research and development projects of the Center for Mountain Ecosystem Studies related to the sustainable management of NTFPs are presented and discussed in the following sections. The second, i.e. commodity chain analysis, is a prerequisite for development efforts aiming for eco-certification.

3.1 Domestication of non-timber forest products: reducing pressure on natural resources

One strategy to reduce pressure on NTFP resources in their natural environment and create more income opportunities for farmers is domesticating them, i.e. growing them on-farm. CMES has pursued this option together with the Department of Forestry in Baoshan prefecture, northwest Yunnan. As the first step, a participatory survey of potential NTFPs was

conducted in 2003 in one of the poorest villages in Yunnan, Yangliu township. Seven valuable medicinal plants species were identified that local farmers were interested to try growing on their land, recently converted to tree crops under the Sloping Land Conversion Program. Agricultural land converted in China under the SLCP to tree crops (mainly peach and walnut trees) are prohibited from being used for growing annual crops, even during the early establishment stage of the trees when there is ample space between them. To compensate for the income loss farmers receive payment for each hectare of land converted to trees, for up to 8 years. However, medicinal plants are not classified as annual crops and can thus be grown in-between the trees. It is commonly observed that trees in similar agroforestry system benefit from the more intensive land management (weeding, fertilizer application to crops) compared to leaving the land fallow (and simply slashing the weeds).

Starting from the spring in 2004, 6 farmer households participated in this action research and tried growing the medicinal plants on a total area of 2ha. They intercropped the medicinal plants with the existing young pear and walnut trees. After 18 months most species were ready for harvesting. Initial experience has shown that some medicinal plants have a high potential for domestication (such as *Dipsacus daliensis*, *Foeniculi fructus* and *Pinellia ternata*) and that a major constraint is lack of knowledge among farmers in the management of growing medicinal plants on-farm. Since 2006, the action research has been extended to more villages and other parts of mountainous Yunnan and CMES has cooperated with the extension staff of Southwest Forestry College in promoting the growing of medicinal plants on SLCP land more widely.

It should be emphasized that the domestication of wild plant resources requires an iterative process of action research and basic scientific studies. Now that the first medicinal plants have been ear-marked as performing well when grown on-farm, as a next step their active chemical ingredients need to be quantified and compared to those plant specimens growing in the wild. If this analysis confirms that the quality of the plants growing on-farm is satisfactory, production on farmers' fields can be confidently promoted. In addition, inventories of wild resources over time will need to be conducted to confirm the claim that

domestication is reducing pressure on the natural resource base and, thus, supports biodiversity conservation. Impact of domestication on market prices need to be examined as well.

However, since domestication of medicinal plants and other NTFPs is not applicable for the majority of species, equal importance needs to be placed on the development of sustainable wild-collection systems. Certification of wild-collection can be an option to provide incentives for conservation and sustainable use and can strengthen local economies. Yet, the rich diversity of NTFP species (among the group of medicinal plants alone) and complex ecological interactions, make certification of wild resources a far more challenging endeavor than the certification of agricultural crops (see <http://www.floraweb.de/map-pro> for more information).

3.2 Commodity chain analysis of major non-timber forest products: a prerequisite for market intervention

Agricultural crops have been well studied and promoted by the Chinese government and international research organizations worldwide. Non-timber forest products, on the contrary, have not yet received the attention they deserve. A better understanding of their value in the household economy as well as in domestic and international markets (including regional cross-border trade) is needed to demonstrate their importance for rural incomes and sustainable resource management. This information is also an essential base for pursuing eco-certification. Under this premise we conducted a study in 2006 that focused on the analysis of commodity chains of selected commercially important non-timber forest products collected and harvested in two townships (Yangliu and Shuizhai townships) in Baoshan prefecture.

Objectives of this research were to (1) identify those NTFPs that are the most important commodities for farmers/collectors in Baoshan prefecture, (2) document details of the commodity chain for the selected NTFPs, and (3) identify opportunities and associated strategies for improving rural communities' benefits from NTFP management, harvest, processing and marketing, while preventing an over-use of the resource base.

The underlying research hypothesis is that a thor-

ough understanding of the commodity chain of NTFPs – from producer/collector, trader and processor up to retailer and consumer – is an essential base for strategic development interventions at the local level as well as a crucial source for sound policy recommendations. The study used key informant interviews as the major tool. Target respondents were the main producers/collectors, traders/wholesalers, processors and retailers of the most important NTFPs from the study area, as well as local government staff. Interviews were complemented by secondary data from government offices, such as information on trade, export and relevant legislation.

Major results, conclusions and recommendations of this study are summarized below:

➤ NTFPs are of great importance in terms of cash income for the majority of smallholder households, and the market demand for all surveyed products is stable or increasing. In the poorer villages, medicinal plants constitute a key income source for most households who can derive up to 75% of their annual cash income from this activity. Walnuts and pine-nuts are increasingly adding to household income as more of the planted trees start bearing fruits. A significant contribution to household income in the wealthier villages comes from the collection of high-value forest mushrooms, such as the Matsutake mushroom (*Tricholoma matsutake*) that is largely exported to Japan and truffle (*Tuber sinensis*) chiefly sold to Europe. A single household can earn up to ten times the average annual per capita income from collecting and selling Matsutake mushrooms.

➤ Over-harvesting is a threat to biodiversity conservation and to the sustained supply of NTFPs as a source of cash income. Collectors and traders observed a steady decline for a range of medicinal plant species, resulting in their increased value on the market. While for medicinal plants and truffles it is a resource with free access to everyone (i.e. without any control of over-harvesting), the case is different for Matsutake mushroom. Communal forest areas are sub-divided and each household in the village has the use rights to a certain piece of the forest. The high value of this particular NTFP has made it clear to users that a decline or complete loss of this resource would harm their household economy and an informal system of sustainable management has evolved (through privatized control over the resource).

➤ Collectors and smallholder producers face major constraints to maximizing income benefits from NTFPs. In general, producers and collectors do not have access to market knowledge (such as demand and price) and sell their produce individually to local (i.e. from within the village) or outside traders. For the lack of a local production and marketing organization there is also no processing (value adding) at the village level. Another issue is that the planting of tree crops, such as pear and walnut (resulting from heavy government promotion), is not based on well-founded knowledge of market development for the products. The large number of mature pear trees have in recent years already led to an over-supply of fruits on local markets and a decline of prices, to the extent that fruits are not harvested. With the large number of walnut trees planted in recent years it remains to be seen whether an over-supply will result in drop-off in prices in six to eight years from now.

➤ Opportunities and needs for intervention are (1) building capacity among community members to access market knowledge and explore joint marketing and processing initiatives, (2) investigating the potential benefits of group certification under organic, Fairtrade or sustainable forest management schemes to access alternative (so-called “niche”) markets and maintain valuable and ecologically important NTFP resources, (3) building capacity within forestry extension services to promote the planting of a wider range of tree species (based on a thorough survey of market demand and prediction of future market developments) and sound management systems (including domestication of selected NTFPs), and (4) making NTFPs more visible, i.e. draw government attention to the many important commodities that have not yet entered official statistics due to a lack of clear classification and challenges in conducting inventories and in monitoring home-use and informal trade; this will form the basis for improving legislation on sustainable management and the equitable share of revenues from NTFP resources.

Concurrently with the commodity chain analysis described above, CMES has started working with government and NGO partners to build capacity among facilitators (extension staff and community development workers) and farmer leaders to engage communities in Southwest China in more professional marketing initiatives. Improved quality manage-

ment and group certification have been key topics in related training activities and workshops as described in the following section.

4. Current certification initiatives in China: opportunities and challenges for smallholder farmers

Certified organic agricultural production began in China around 1990, after the Rural Ecosystems Division of the Nanjing Institute of Environmental Sciences (now the Organic Food Development Center of China [OFDC] under the State Environmental Protection Administration [SEPA]) became China's first member of the International Federation of International Agricultural Movements (IFOAM) in 1988^[12]. Since then, organic food production in China has grown rapidly, mainly driven by demand from overseas markets in Europe, Japan and the USA. In recent years demand for organic products on the domestic market has been increasing, as the wealthy middle class in China is rapidly growing (mainly in the big cities in the east of the country) and consumers are increasingly becoming aware of the health benefits of eating organic food. China's first supermarket for organic products opened in Shanghai in 2005.

Aside from the Chinese certification agencies, namely the Organic Food Development Center of China (OFDC) and the China Organic Food Certification Center (COFCC), a number of international certifiers are now present in China (such as OCIA, ECOCERT, BCS, IMO, JONA, and others). The certification of farms growing crops for the overseas organic market by international certifiers has started in 1995.

Unlike in many other countries, where farmers were the drivers behind organic agriculture movements (at least during the early development stage), organic food production initiatives in China were originally organized and managed by the government (state firms). While the government has moved away from direct ownership and private firms have taken over now, smaller companies and smallholder farmers in poorer and remote areas, such as those in mountainous Southwest China, will need more government support to overcome constraints to participation in the growing organic food market in China and abroad. Even today, farmers are not the primary force

behind the growth in organic production, but trading companies. These typically initiate certification, provide technical advice, organize needed input supply, and take care of processing and marketing. This mode of operation also prevails in poorer regions and in wild-collection areas. Most of the certified organic wild-collection of food and medicinal plant resources is managed/controlled by a few large companies that typically also are engaged in managing a number of organic farms.

The following sections report of three on-going innovative strategies that specifically address the needs related to certification of smallholder producers and collectors of non-timber forest products and that have a direct bearing on biodiversity conservation. These few examples draw a clear picture of the scale of the challenge that most mountain farmers and the supporters of such smallholder initiatives are currently facing.

4.1 Creating more opportunities for smallholder organic producers

In 2005, CMES, the BioFach China project and the Organic Food Development Center of China (OFDC) started their cooperation based on the assumption that the development of domestic marketing and distribution business of organic agricultural and non-timber forest products contributes to the improvement of the socio-economic situation of smallholder mountain farmers in Southwest China. Joint capacity building initiatives have supported building knowledge and skills among communities and development organizations to strengthen related local initiatives, as well as raising awareness among Chinese consumers regarding the benefits of organic food production and Fairtrade.

The BioFach China project is a public-private partnership project coordinated by the Nuremberg Global Fairs with support from the Deutsche Investitions-und Entwicklungsgesellschaft (DEG, under the KfW banking group) and accompanied by the International Federation of Organic Agriculture Movements (IFOAM) as the patron of BioFach fair (for more information see URL: www.biofach-china.com). The BioFach is the leading annual international product fair for certified organic products. The BioFach China project aims to contribute to the domestic

market development for organic and natural products in China. It does this through policy advice, establishing networks for dialogue and exchange, trainings for all actors in the commodity chain, market development, and raising public awareness. It also aims to connect the Chinese organic sector with the international markets using the other BioFach events in Germany, Japan, United States and Brazil to promote the Chinese organic industry. A yearly annual BioFach-China product fair was launched in May 2007.

Since the middle 2006, two training seminars for smallholder groups and supporting organizations have been jointly realized by CMES, BioFach-China and OFDC. The first seminar and workshop provided a platform for people from various fields and professions (i.e. research/academe, government, business, NGO sectors) currently involved in promoting or doing organic farming and Fairtrade to exchange views and ideas on opportunities and key challenges in Southwest China. It is obvious from the facts that were presented and discussed that organic farming and Fairtrade have a great potential in China. Key challenges in Southwest China where mountain farmers cultivate remote hilly lands of relatively low productivity (compared to the lowland areas in the middle and east of the country) are (1) access to knowledge in production technology, processing and marketing, (2) access to markets (due to poor infrastructure and lack of information), and (3) cost of certification (including those associated with complying to certification requirements). The seminar-workshop also confirmed that organic food production by smallholder farmers (in contrast to large-scale farm enterprises and state-owned farms in the middle and eastern part of the country that largely produce for the export market), and more so Fairtrade, are still relatively new concepts in China. This is especially true for provinces in the southwestern part of the country.

The focus of the second training was based on the conclusion from the first seminar: Community facilitators, extension workers and local community/farmer group leaders need more knowledge on the specific requirements rural producer groups need to follow and the skills they need to attain to engage more professionally in the production and marketing of their farm or non-timber forest produce. Quality awareness, internal control systems and smallholder

group certification were key topics during the training. Participants were staff members of government agencies, non-governmental organizations, research institutions, certification agencies and the private business sector directly involved in supporting or collaborating with rural communities. The IFOAM manual for setting up internal control systems, or ICS, in the context of smallholder group certification was translated into Chinese language and used for the seminars.

In addition, the topic "Poverty Alleviation and Organic Agriculture" has been introduced during several events in 2005/2006. In December, 2006, the topic was presented during the first BioFach China Conference in Shanghai in order to create more awareness and to bring interested companies in contact with small farmer initiatives. One of the core experiences is that no functioning and successful organic smallholder project exists in China right now.

While certification under national and international organic labeling schemes has been the major focus of this joint initiative, also alternative ways of marketing agricultural and non-timber forest products on the Chinese market will be explored in the future. Alternative approaches to market organic products could be those that forego the need to obtain the label of an accredited certifier (and thus reduce cost) by building consumer trust, i.e. develop localized direct-marketing schemes and promote products under a unique brand name. This may build on successful examples in other parts of China, such as Hongkong, and abroad (e.g. Thailand).

4.2 Emerging Fairtrade initiatives in China

Unlike certified organic production, Fairtrade certification is a relatively recent concept that contributes to sustainable development by supporting better trading conditions for small-scale farmers in the developing world. Higher prices paid by consumers (mainly) in developed countries for a product that has been produced according to Fairtrade standards means more income for producers and development support for their entire community.

Fairtrade Labelling Organizations International (FLO) is the leading Fairtrade standard setting and certification body. FLO was established in 1997 and is an association of 20 Labelling Initiatives world-

wide that promote and market the Fairtrade label in their countries. FLO members currently operate in 15 European countries as well as Australia, Canada, Japan, Mexico, New Zealand and the United States. At present, FLO regularly inspects and certifies about 508 producer organizations in more than 50 countries in Africa, Asia and Latin America. The major strategic intent of FLO is (1) to deliberately work with marginalized producers and workers in order to help them move from a position of vulnerability to security and economic self-sufficiency, (2) to empower producers and workers as stakeholders in their own organizations, and (3) to actively play a wider role in the global arena to achieve greater equity in international trade (see <http://www.fairtrade.net>).

In China, only two pilot Fairtrade projects exist so far (as of mid 2006), but many more producer groups have approached FLO to participate in the scheme. As with organic certification, the motivation to start a Fairtrade producer group has come from companies interested in exploring this market niche for Chinese tea. There is no awareness at farmers' level about the existence of a market for Fairtrade products. The export company assisted producers to form an association and develop more technical, managerial and organizational skills. The tea associations have made great progress in terms of embracing and applying all principles of Fairtrade and their communities have benefited greatly from the extra money (Premium) received from the sale of their FLO-certified tea overseas. This can also be attributed to the annual inspections and resulting recommendations for improvement given by FLO.

It may be time for scaling up the concept in China. The first seminar organized by CMES, BioFach-China and OFDC (see previous section) has already raised considerable interest among NGO groups in Southwest China to know more about the concept and discuss it with the communities they work with. Recently, CMES has also been approached by the Western Academy of Beijing, an International School, to jointly promote Fairtrade in China's capital.

4.3 Sustainable forest and NTFP management: Forest Stewardship Council certification

The Forest Stewardship Council (FSC) is an international network whose mission is to promote

environmentally appropriate, socially beneficial, and economically viable management of the world's forest. It provides a system for different stakeholders interested in forest issues to work towards responsible forest management. Through the FSC system, the forest owners, managers, forest product manufacturers, local communities, non-governmental organizations and other interest groups are given equal access and voice (see <http://www.fsc.org>).

In 2001, WWF-China helped establish the National Working Group on Forest Certification with 28 representatives from the government, NGOs, enterprises, media, research institutions and trade organizations. The main task of the Working Group is to put forward strategies for forest certification development in China. A draft version of Chinese Forest Certification Standard has since been completed, and a review is in process to ensure it satisfies the requirements of national laws, regulations and policies, while also meeting Forest Stewardship Council requirements. The FSC China National Initiative was launched in March, 2006 (see <http://www.forestandtradeasia.org>).

FSC certification can include non-timber forest resources as well (the most widely-known is Brazil nut). All NTFPs that bear the FSC logo must come from fully FSC certified forests and the management system must be evaluated for each NTFP. However, even though the NTFP Working Group of FSC has been attempting to put NTFP certification into practice since 1996, experience with the certification of NTFPs is still relatively new. Ecological, economic and social implications related to controlled harvesting of the large variety of plant species in complex eco-systems and to adding value to these natural resources are still not well-understood. In many countries, land tenure or long-term land use rights complicate the issue. That FSC-certified NTFPs command a price premium in the market is also not yet proven for the majority of products.

The Center for Mountain Ecosystem Studies has started discussing with WWF-China and FSC to start a pilot project on community-managed forest and NTFPs in Southwest China. So far, only forest plantations have been granted FSC certification in the country. Presumably the Matsutake mushroom that is harvested by the community from the community-owned pine forest may fetch higher prices in Japan, once it bears the FSC label. This, as well as the op-

portunities for other products (such a walnut, pine-nut, truffle, medicinal plants, etc.) to increase in value through FSC or any other certification, will need to be confirmed through further research.

5. Summary discussion and conclusions

The demand for certified products from well-managed forests and agroforestry landscapes is on the rise. Smallholder producers and collectors of non-timber forest products are benefiting from this trend as has been observed in various parts of the world. Recent studies conducted by the Center of Mountain Ecosystem Studies show that NTFPs are an important source of household supply and cash income for the majority of upland farmers in Southwest China. Sustainable management is possible – as the case of Matsutake mushroom shows – but it does not normally exist for the majority of non-timber forest resources, such as medicinal plants and truffle. The incentive for communities to develop a mechanism to regulate the access to natural resources does only exist when producers or collectors understand and can enjoy the economic and environmental benefits from such intervention. While resource privatization can lead to sustainable management of NTFPs – as observed with Matsutake mushroom growing in Baoshan prefecture, Northwest Yunnan – it can also create or enlarge disparity in income levels within the community, as only a fraction of all households benefits from the valuable resource. Government regulation, such as taxation of the mushroom trade, can help improve the existing system so that every community member will benefit.

Domestication of NTFPs is one way to generate income and reduce pressure on natural resources; it is, however, only applicable for plants that can be easily grown on-farm, such as some medicinal plants. Besides, if plants that demand a good price in the market can be easily domesticated, more people will grow them or even companies might start production on a much larger scale. This may cause fierce competition and is likely to change market prices.

Certification may be a more effective way to balance income needs and biodiversity conservation goals on a larger scale. Certification systems relevant for NTFPs include organic agriculture, sustainable forest management (FSC) and Fairtrade. While FSC

certification may be the most “natural” scheme for a forest product, it is also the most difficult certification to obtain, in terms of the evaluation process and cost. In addition FSC-certified NTFPs may initially not sell as well as products that bear a well-recognized organic certification label; most consumers may have never heard about FSC-certified non-wood products.

Recent discussions regarding combining certification schemes to reduce time and cost (see <http://www.isealalliance.org>), have not been held in China yet since only organic certification is more widely known in the country. Combining certification schemes, i.e. organic, Fairtrade and sustainable forest management certifications, makes progressively more sense as all are moving towards holistic approaches, i.e. incorporating ecological, social and economic aspects in their respective standards. Therefore, the overlap between standards of all three major certification schemes is increasing. NTFPs have played a key role in this discussion since they can be certified under any of the three major certification schemes.

It is a positive development that certification has become more affordable in the developing world since group certification became available and IF-OAM published a guidance manual for producer organizations applying for smallholder group certification in 2004. The challenges for smallholders in China's mountainous southwestern provinces, however, are still more profound. Right now, no functioning and successful organic smallholder project exists in China. The government-promoted “Farmers plus Company Model” has worked well and without major conflicts where it has been applied in the past. Traders and processing businesses have contributed their skills, financial resources/investments (e.g. in storage and processing facilities) and their established business connections, all of which rural communities usually do not have. This is also how the Fairtrade pilot projects were initiated (i.e. through the initiative of the export company) and are still functioning today, with a notable increase in empowerment of the producer associations over time, however. In any such case, there is no fast way for communities to take over the role that the company has played. And not many may have the desire to do so as it requires commitment, time and patience at the start, and hence, are satisfied with the status quo.

Many NGOs, especially in Southwest China,

are working with poor communities where no such company-farmer scheme exists to develop or advance local business models by integrating economic, social and ecological benefits. They build capacity among producers of agricultural or handicraft products or collectors of NTFP to work together and jointly market their produce to enlarge profits. However, improved market access is the major goal, certification just one of several potential pathways. Trainings that have been initiated by the BioFach-China project in cooperation with Center for Mountain Ecosystem Studies and the Organic Food Development Center of China support building the knowledge base needed by community development facilitators, local leaders and certifiers to develop capacity among communities to set up and run a market-oriented association. It needs to start from the basics of organizational management, including quality assurance and internal control systems in smallholder groups. A producer and marketing group will need this fundamental knowledge, whether the group likes to pursue certification or just wants to improve its marketing power.

Aiming for certification may not always be the best option, as the domestic market for certified NTFP is limited and the challenges to export beyond solution for many small producers groups, and with Fairtrade still in its infant stage in China. Alternative pathways need to be explored with equal vigor. Developing a brand name for community products from sustainably managed farm and forest land, linking with consumers and building trust are steps that need to be explored. Groups and facilitators need to learn from outside experiences, such as the successful government-supported promotion of upland village products in Thailand.

The initiatives presented above (Section 4) provide new directions and alternative models for more genuinely helping smallholder farmers and collectors engage in production and marketing in line with environmental and Fairtrade standards. Outside facilitators, especially non-governmental organizations, can play a decisive role in moving such initiatives in China forward by helping communities attain the needed technical, organizational and managerial skills. Successful examples can be extrapolated and implemented with the lead of local governments and extension staff, and findings can be shared through national and international networks to enhance

mutual learning. Drafting of policy recommendations and discussion papers – based on thorough evaluation of initial successful cases and approaches – can enhance discussion and exchange, and scale up impact. However, more needs to be done. NTFPs need to be duly recognized and monitored like any other commodity by the government, and use rights need to be improved. Research organizations have a role to play in helping understand the ecology, reproductive capacity over time and sustainable management of NTFPs. Moreover, consumer awareness need to be raised, and innovative partnerships sought with the business sector (such as looking at effective public private partnerships and corporate social responsibility) to make the production and marketing of NTFPs a successful endeavor, from an economic, social and environmental perspective.

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Appendix A: List of acronyms

CIM	Centrum fuer Internationale Migration und Entwicklung
CMES	Center for Mountain Ecosystem Studies
COFCC	China Organic Food Certification Center
DEG	Deutsche Investitions- und Entwicklungsgesellschaft
FLO	Fairtrade Labelling Organizations
FSC	Forest Stewardship Council
ICRAF	World Agroforestry Centre (formerly: International Centre for Research in Agroforestry)
ICS	Internal Control System
IFOAM	International Federation of Organic Agriculture Movements
IMO	Institute for Marketecology
JONA	Japan Organic & Natural Foods Association
KfW	Kreditanstalt fuer Wiederaufbau

KIB	Kunming Institute of Botany
NFPP	Natural Forest Protection Program
NGO	Non-Governmental Organization
NTFP	Non-Timber Forest Product
OCIA	Organic Crop Improvement Association
OFDC	Organic Food Development Center
SLCP	Sloping Land Conversion Program
SEPA	State Environmental Protection Administration
UNESCO	United Nations Educational, Scientific, and Cultural Organization
WWF	World Wildlife Fund

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