NON TIMBER FOREST PRODUCTS RESEARCH CENTRE
NON TIMBER FOREST PRODUCT SUB-SECTOR SUPPORT PROJECT

The Role of NTFPs in Poverty Alleviation and Biodiversity Conservation

Proceedings of the international workshop on the theme in Ha Noi, June 2007

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Preface

Non-Timber Forest Products (NTFPs) play an important role in the livelihoods of the rural poor, as a source of food, medicine, construction materials, and income throughout the world. This is reflected in the Mekong region; in Viet Nam approximately 24 million people leaving in and around forest areas utilize NTFPs and in Lao PDR about 80% of the population pursue livelihoods within which NTFPs play a significant

The International Conference "The Role of Non-timber Forest Products (NTFPs) in Poverty Alleviation and Biodiversity Conservation" was organized in Viet Nam from 11 through 15 June 2007. The Conference attracted the participation of almost 200 participants representing researchers, policy-makers, managers, practitioners, and entrepreneurs from throughout Asia who are involved in NTFPs initiatives. They came to share information, to exchange experiences and to collectively explore the role that NTFPs can play in both reducing poverty and supporting biodiversity.

As this Proceedings illustrates, NTFPs initiatives are moving beyond the more narrowly focused programmes and projects of the past to more integrated ambitious approaches that seek to address both sustainable livelihoods and sustainable management and use of NTFPs. The papers, presentations and lively discussions of the Conference highlighted the complexity of such undertakings. As the reader of this Proceedings will find, successful initiatives are the result not only of long term commitment and providing of research and technical assistance, but also linking producers to markets, and enabling access to microfinance and business development support. Yet even with this wide ranging support, programmes will be ineffective if there are policies and practices that hinder access to resources, markets, and credit.

The Conference was an initiative by the Netherland Government funded NTFPs Sub-Sector Support Project Phase II with the support of the World Conservation Union (IUCN) and the Ministry of Agriculture and Rural Development of Viet Nam. The generous sponsor of the Netherland Government to NTFPs research and field projects in Viet Nam and to this Conference in particular is highly appreciated.

We sincerely hope that this first international conference on NTFPs organized in Viet Nam has brought the NTFPs into the higher level in the national conservation and development agenda. The discussions, results and recommendations from the conference will help Viet Nam and other countries in developing strategies and setting out action plans in the field of NTFPs in the coming years.

H.E Hua Duc Nhi

Vice Minister

Ministry of Agriculture and Rural Development, Viet Nam

Dr. Katherine Warner

IUCN Country Group Head

Cambodia, Lao PDR and Viet Nam

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The Ministry of Agriculture and Rural Development of Viet Nam and the World Conservation Union (IUCN) wish to acknowledge the generous support of the Netherlands Government for the NTFPs project, in particular for the international Conference "The Role of Non-Timber Forest Products (NTFPs) in Poverty Alleviation and Biodiversity Conservation", as well as the publication of these proceedings. For the additional financial contribution from the German Technical Cooperation (GTZ) to the publication of this proceedings we are also grateful.

We would like to express our sincere appreciation to His Excellency Hua Duc Nhi, Vice Minister, MARD, for his valuable support and contribution to the Conference.

We gratefully acknowledge the support in preparation and organization of the Conference from the Ministry of Agriculture and Rural development (MARD) in Viet Nam and the following departments of MARD:

International Cooperation Department

Department of Forestry

Department of Science and Technology

Forest Protection Department

Department of Agro-Forestry Products Processing and Salt Industry

Forest Science Institute of Viet Nam

The Non-Timber Forest Products Research Center

Within MARD we would also like to especially thank the following individuals:

Mr. Tran Kim Long, Vice Director ICD/MARD; Dr. Pham Duc Tuan, Vice Director, DoF; Dr. Trieu Van Hung, Director of Department of Science and Technology; and National Project Director, NTFPs Project; Prof. Nguyen Hoang Nghia, Director of FSIV, Dr. Nguyen Huy Son, Director of the NTFPs RC.

We are grateful to the following agencies who have partnered with us in this initiative:

CARE International in Viet Nam (with special contribution from Ms. Fiona Percy, for her active role in facilitation and review of conference papers)

The Netherlands Development Organization (SNV)

The Regional Community Forestry Training Centre for Asia and the Pacific (RECOFTC)

The World Wildlife Fund for Nature (WWF)

The Swiss Import Promotion Programme (SIPPO)

We would also like to thank the NTFPs network for their help in organizing and conducting the conference.

Support from IUCN Viet Nam country office staff is also gratefully acknowledged, including Dr. Katherine Warner, Head, Country Group 1; Dr. Vu Van Trieu, Country Representative; Mr. Bernard O'Callaghan, Programme Coordinator; Mr. Nguyen Van San, Senior Technical Officer; Mrs. Nguyen Thi Yen, Programme Manager for Forests and Protected Areas; Ms. Sarah Webster, Ms. Susan Garner; Ms. Dinh Thi Minh Thu and Ms. Nguyen Thi Bich Hue, Communications Officers; as well as many supporting staff of IUCN Viet Nam for their help in organizing the conference and proceedings.

Acronyms

AFTA	ASEAN Free Trade Area
ANSAB	Asia Network for Sustainable Agriculture and Bioresources
CASI	Civil Action for Social Inclusion program of CARE International in Viet Nam
CBA	Cost Benefit Analysis
CBE	community based enterprise
CECEM	Centre for Community Empowerment, Viet Nam
CEFM	Community Empowerment for Forest Management project (CARE Viet Nam)
CF	community forestry
CFUGs	community forest user groups
CGMFPF	Chhattisgarh Minor Forest Products Federation, India
CITES	Convention on International Trade in Endangered Species
CREDEP	Centre for Research and Development of Ethnomedicinal plants
CRES	Centre for Resources and Environmental Studies Viet Nam
DAFEO	District Agriculture and Forestry Extension Office
DARD	Department of Agriculture and Rural Development
DED	German Development Service
DFO	District Forest Office
DNCP	Department for Nature Conservation and Protection, Cambodia

DoF	Department of Forestry
DoNRE	Department of Natural Resources and Environment
DoST	Department of Science and Technology
EC	European Commission
ETI	Ethical Trading Initiative
EU	European Union
FAO	Food and Agriculture Organization of the United Nations
FECOFUN	Federation of Community Forestry Users Nepal
FFI	Fauna & Flora International
FGS	Forest governance System
FHR	Forest Herbs Research Ltd
FIPI	Forest Inventory and Planning Institute, Viet Nam
FLO	Fair Trade Labelling
FPC	Forest Protection Committee
FSI	Forest Science Institute
FSIV	Forest Science Institute of Viet Nam
FUG	Forest User Group
GAFCP	WHO Good Agriculture and Field Collection Practices
GDP	Gross Domestic Product
GEF	Global Environmental Facility

GRET	Group for Technological Research and Exchange
GTZ	German Technical Cooperation
ICARD	Information Center for Agricultural and Rural Development
ICIMOD	International Centre for Integrated Mountain Development
ICRAF	World Agroforestry Centre
IFAT	The global network of Fair Trade Organisations
IFC	International Finance Corporation
INBAR	International Network for Bamboo and Rattan
IPGRI-APO	International Plant Genetic Resources Institute – Regional Office for Asia, the Pacific and Oceania
IRR	Internal Return Rate
ITTO	International Tropical Timber Organization
IUCN	World Conservation Union
JFM	Joint Forest Management
Lao PDR	Lao People's Democratic Republic
LHF	Leasehold Forest
MA&D	Market Analysis & Development
MAF	Ministry of Agriculture and Forestry
MAPPA	The Medicinal and Aromatic Plants Programme in Asia
MAPs	Medicinal and Aromatic Plants

MARD	Ministry of Agriculture and Rural Development
MPDF	Mekong Private Sector Development Facility
MPI	Medicinal Plants Innovation
NABP	National Agricultural Biodiversity Programme Lao PDR
NAFRI	National Agriculture and Forestry Research Institute of Lao PDR
NAFES	National Agriculture and Forestry Extension Services
NFP	National forest Policy 1988 of India
NGO	Non-government organization
NRM	Natural Resource Management
NTFPs	Non-timber Forest Products
NWFPs	Non-Wood forest products
OTOP	One Tambon One Product policies of the Thai Government
PARC	Creating Protected Areas for Resource Conservation using Landscape Ecology Project
PBP	Pacific Basin Partnership
PHVA	Population and Habitat Viability Assessment
PPAs	People's Protected Areas
PROFOR	Program on Forests
PVSE	poor, vulnerable and socially excluded
RATA	Rapid Land Tenure Assessment

RCFEE	Research Centre for Forest Ecology and Environment
RECOFTC	Regional Community Forestry Training Center for Asia and the Pacific
RNE	Royal Netherlands Embassy
SADU	Small-scale Agro enterprise Development for the Uplands Project, Lao PDR
SEANN	South and East Asian Countries NTFPs Network
SEDF/IC	SouthAsia Enterprise Development Facility
SEED	Supporting Entrepreneurs for Environment and Development
SGP	Small Grants Programme
SHGs	Self-Help Groups
SIMPA	Sa Pa Indigenous Medicinal Plants Association, Viet Nam
SIPPO	Swiss Import Promotion Programme
SMFE	Small and Medium Forest Enterprises
SNV	Netherlands Development Organization
SPE	Sa Pa Essentials, Viet Nam
STEA	Science, Technology, and Environmental Agency of Lao
SUFORD	Sustainable Forest Development
TFF	Forest Trust Fund
UNCTAD	United Nations Conference on Trade and Development
UNDP	United Nations Development Programme
US	United States

USAID	United States Agency for International Development
USD	United States Dollar
VIFA	Viet Nam Forest Science Technology Association
VND	Viet Nam Dong
WFP	World Food Programme of the United Nations
WHO	World Health Organization
WTO	World Trade Organization
WWF	World Wide Fund for Nature

Overview

The Conference on the Role of NTFPs in Poverty Alleviation and Biodiversity Conservation was convened to provide an opportunity to bring together researchers, practitioners and entrepreneurs from Asia involved in NTFPs (Non-Timber Forest Products) initiatives. While there have been a number of meetings in the region over the last few years on NTFPs, the linkages between NTFPs, poverty reduction and biodiversity had yet to be explored. Consequently, this conference was convened to fill this important gap by looking beyond NTFPs as a 'minor' product and explore not only the current, but also the potential, contribution of NTFPs to both livelihoods and biodiversity.

There is increasing recognition that NTFPs play an important role in the livelihoods of the rural poor as a source of food, medicine, construction materials and income. As noted in a presentation in the conference, it has been estimated that there are 60 million highly forest-dependent indigenous people in Latin America, West Africa, and Southeast Asia, with an additional 400 million to 500 million people directly dependent on these natural products. In this context, it is important to recognise that NTFPs can play a critical role in providing both food and income for the poorest households, notably by creating income and employment opportunities for women.

However, while there is growing appreciation of the importance of NTFPs for rural households, especially of the very poor, there are also concerns about the potential impact of NTFPs collection on biodiversity. A number of critical questions are often raised such as under what conditions can NTFPs be sustainably harvested? Can on-farm production of NTFPs result in improved biodiversity conservation? Does the commercialisation of NTFPs result in over-harvesting?

There are also often concerns regarding poor people's access to equity, raising further questions such as what is needed for markets to be pro-poor? Are attempts to develop NTFPs for poverty alleviation really reaching the poorest of the poor? To what extent are these attempts impacting on biodiversity conservation? Such questions raise the important issue of whether pro-poor NTFPs projects, which enable access to markets, result in degraded forests.

The conference attempted to both address and explore these concerns and questions. Taking a positive problem-solving approach, the conference worked to identify successful research and development initiatives and businesses that were (or were in the process of becoming) both pro-poor and pro-biodiversity, and to determine what are the critical elements for success. The key anticipated outcomes of the conference were:

- An enhanced awareness of the critical elements needed for successful NTFPs initiatives that strive for environmental sustainability and poverty alleviation; and
- Identification of a list of critical gaps in our understanding of NTFPs, including research, appropriate materials for different audiences and communication.

It was also anticipated that there would be a revitalised interest in NTFPs in Viet Nam that would not only result in enhanced capacity, but also increase the membership of the NTFPs Network in Viet Nam. The conference also included a small trade fair for NTFPs producers to display and sell their products, and field trips to action research sites in Quang Ninh province.

The NTFPs Sub-sector Support Project took the lead in organising the conference. Launched in Viet Nam in 1998 as a capacity building project promoting the sustainable use of NTFPs and now completing

its second phase, the project sought to facilitate a regional exchange of experience and information, and welcomed the opportunity to present some of its key research findings and activities.

The conference utilised open plenaries, working groups and informal gatherings (poster sessions and a trade fair), to provide opportunities for exchanging experiences and facilitating discussions. The first day's sessions focused on identifying *the critical elements for successful NTFPs initiatives* that provide income opportunities for the poor and support biodiversity conservation. The second day's focus was on *critical elements of successful products, models and methods*, while the last session of the conference on day three focused on *NTFPs business*.

Highlights from the conference

Through presentations and discussions, a rich picture emerged of the current understanding of the linkages between NTFPs, poverty alleviation and sustainable resource management, which reflected the lessons learned of past and current research and field-based initiatives.

There are successful initiatives that provide economic benefits to the poor and incentives for sustainable management

While the presentations included examples from countries and organisations throughout the region, the following common elements for success were identified:

- Access rights to forest products. These access rights may be detailed within a separate policy on NTFPs or within forest policy;
- An integrated approach which recognises that communities were not homogeneous but comprised community members that varied in gender, age, economic status, ethnicity, caste, etc;
- Diversification of livelihoods, especially among the poor;
- Promotion of forest products that are abundant and available in the long-term, and initiatives that explicitly link harvesting of products to the sustainable use of local ecosystems;
- Recognition that NTFPs are shifting from forest to agricultural fields to become *'non-timber farm products'* that are cultivable, desirable, profitable and innovative, especially when there is a strong market demand;
- Growing interest in agrobiodiversity and similar approaches to supporting biodiversity outside of protected areas in working landscapes such as farms and fields. This supports the shift of NTFPs to on-farm production and provides opportunities for new partnerships between agricultural and forestry agencies and organisations; and
- NTFPs can be a ladder or stepping stone in the transition of the livelihoods of rural households. For example, in the dynamic economies of countries in the Mekong region, NTFPs may provide household income for health and education that will then enable its members to find employment and opportunities in other sectors.

There are continuing concerns and gaps

The presentations at the conference primarily reported on initiatives that were just beginning, or were in the first phase. This reflects the reality of the short lifespan of projects or initiatives. Projects, especially projects supported by bilateral agencies, are usually only funded for three or four years – a relatively short period for identifying NTFPs and current and potential markets, developing products, and showing tangible results. It is not surprising that projects were more readily able to describe their assessments of the current use of NTFPs, rather than the overall long-term impact of interventions.

In most countries, there is a continuing gap in policy and procedures regarding NTFPs. Participants stressed the importance of a **strategic orientation** in the development of NTFPs that encourages policies on producing NTFPs, including establishing, processing and consuming.

While there are **approaches, methods and tools** available – such as the value chain which links all actors, strategic alliances, encourage public private partnerships (PPP), and creates incentives for communication - the effective use of these methods and tools remains an exception rather than the rule.

There is an urgent need for more **training and capacity building**, especially since practitioners/ implementers often have a background in forestry or natural resource management, with relatively little experience in marketing and enterprise development. Therefore, it is not surprising that a lack of marketing and economic analysis is a prevalent weakness in the sector. Programmes, even programmes regarded as being successful, often have a weak analysis of market demand or consumer preference, which in turn results in a period of trial and error that could have been shortened or eliminated if initial market analysis had been conducted.

There is all too often a continuing emphasis by researchers and practitioners on **assessments** of NTFPs current contribution via existing products and markets, rather than linking producer/gatherers to markets and the private sector for tangible economic benefits. Also cited in both presentations and discussions was the lack of **cost-benefit analyses**, not only for the costs of developing products, but also for understanding which products would provide the greater opportunities for providing benefits to the poor, especially marginal groups and women. Linked to cost-benefit analyses is the need for implementation to go beyond a successful pilot site to justify the expenditure of resources.

Assessments of the impact of harvesting NTFPs on natural resources, in order to attribute changes in natural resources to programme activities, are of special difficulty since NTFPs are often harvested not only by communities in the pilot sites, but also by outsiders and in some instances by workers hired by commercial enterprises.

Private sector engagement in programmes (and at the conference) remains weak

The weakness in establishing and supporting successful links with the private sector reflects the limitation of projects designed and implemented by researchers, conservationists and community development specialists. Markets and establishing linkages with the private sector will continue to be a challenge as government agencies, NGOs and the private sector do not have the necessary skills and networks to meet and work with each other. It is interesting that one of the most successful initiatives presented at the conference, the Medicinal Plants Innovation (MPI) Partnership , includes a proactive private sector partner who plays a leading role and works closely with producers, research institutes and NGOs. It is in such partnerships that win-win arrangements can occur in which the poor have an incentive for sustainable management and receive tangible economic benefits.

Similar private sector partnerships are also needed for certifying products for markets – a key emerging area for NTFPs. The lessons learned from the certification of other products suggests that while the costs of certification remains a challenge, a partnership with a commercial company can result in a win-win arrangement for both the communities and the company.

Conclusions

The conference provided a forum for a lively open regional exchange of experiences in NTFPs and the following important thematic points emerged:

- *NTFPs are for many a transition to other livelihoods:* While there is a high level of dependency on NTFPs, especially by the poor, other opportunities are emerging in the fast-growing economies of the Mekong. By providing income that can be utilised for education and training and networks for the flow of information, NTFPs initiatives enable community members to be able to better participate in these new opportunities.
- *Policies and regulations for NTFPs are urgently needed:* Policies and regulations are needed that create a framework for NTFPs conservation, as well as establish and secure rights for local people. These rights include not only access to the forest to harvest products, but also for processing (forming associations for processing and trade) and transporting products without high tariffs and fees.
- *Partnerships are necessary, but a continuing challenge:* While there is on-going interest in NTFPs for poverty alleviation and biodiversity conservation, the partnerships needed for success are not in place. Practitioners in the field need information that may not be of interest to researchers and often neither practitioners nor researchers have the skills and trust to seek and work with private sector partners. The challenge will be to create partnerships where researchers can be more responsive to needs that emerge from the field, and can access information and markets from the private sector. Tools such as value chain analysis can provide a mechanism for those involved in a product to build a better understanding of relative roles and benefits, and form mutually beneficial partnerships.

Plenary Opening

OPENING SPEECH

H.E. Hua Duc Nhi, Vice Minister of MARD

Ladies and Gentlemen,

First of all, I would like to warmly welcome all participants from Viet Nam, Asia and many other countries to this important conference today.

As you may know, under the cooperation framework between the Ministry of Agriculture and Rural Development (MARD) of Viet Nam and the Royal Netherlands Embassy (RNE), the Non-Timber Tree and Forest Products (NTFPs) Support Project, executed by MARD with financial support from RNE and technical support from the World Conservation Union (IUCN), has obtained many achievements during its implementation period from 1998 to June 2007. Many of project's results and achievements, which have been synthesised and documented, have proven the increasingly important role of NTFPs in economic development for residents living near and in forests, especially for poor people. In addition, the project has raised greater awareness regarding concerns about the impacts of unsustainable NTFPs exploitation on biodiversity conservation. As a project activity, the international conference on "The Role of NTFPs in Poverty Alleviation and Biodiversity Conservation" is being held today through collaboration between MARD, IUCN and other relevant partners in Viet Nam.

This conference is an opportunity for researchers, policy-makers, managers, business people from different private sectors in Asia and others parts of the world, and people involved in NTFPs for poverty reduction and biodiversity conservation to exchange and share methodologies, approaches, information on products, markets and lessons learned from NTFPs conservation and development initiatives. This event is also a chance for all participants to further understand the main factors leading to the successes of NTFPs initiatives and NTFPs production and business activities.

The Government of Viet Nam has promoted rapid and sustainable economic development. The country revised its Law on Forest Protection and Development in 2004, and the Viet Nam Strategy on Forest Sector Development by 2020, which is in line with the new development trend of the country, and provides a roadmap to active integration of Viet Nam's socio-economy and environment in the context of globalization. MARD also approved the Proposal on NTFPs Conservation and Development by 2020 and is now reviewing the NTFPs Action Plan by 2010 for final approval. The "NTFPs Support Pilot Projects 2007-2010" proposal developed by MARD with technical support by IUCN is now being submitted to the Forest Trust Fund (TFF) for funding. The proposal presents the Government of Viet Nam's awareness of the importance of NTFPs in agricultural and rural development, as well as in the overall socio-economic development of Viet Nam.

On this occasion, on behalf of MARD, I would like to express our sincere thanks to our international friends, who have been cooperating with us in the past to promote the agro-forest development of Viet Nam in general, and the NTFPs sector in particular. Our thanks also go to the RNE and the government and people of the Netherlands for their support for Viet Nam's sustainable use of natural resources, especially in the sustainable use of timber and NTFPs.

Our thanks also go to the IUCN and other government and non-government organisations for their active support in forest protection and the sustainable conservation of Viet

Nam, among which, the implementation of the NTFPs Project from 1998-2007 should receive a special mention. We would also like to express our thanks for IUCN's help in organising this important international conference.

Many thanks must also be expressed to our Vietnamese colleagues for their cooperation in agricultural and rural development, especially in NTFPs development.

On behalf of MARD, I am honoured to inaugurate the international conference on The Role of NTFPs in Poverty Alleviation and Biodiversity Conservation.

May the conference be a great success and I wish all participants the very best of health and happiness in the years ahead!

WELCOMING REMARKS

Dr. Vu Van Trieu, IUCN Viet Nam Country Representative

Your Excellency, Vice Minister Hua Duc Nhi of the Ministry of Agriculture and Rural Development, and Dr. Katherine Warner, Head of the IUCN Country Group I, Viet Nam, Lao PDR and Cambodia, and ladies and gentlemen.

Firstly, on behalf of IUCN, I would like to welcome you all to Viet Nam and to the International Conference on The Role of Non-Timber Forest Products in Poverty Alleviation and Biodiversity Conservation.

This is a very meaningful event as it is the first international conference to be held in Viet Nam involving collaboration between the Ministry of Agriculture and Rural Development (MARD) and The World Conservation Union (IUCN), together with other important IUCN members, and partners including GTZ, WWF, CARE International, SNV, Sippo and RECOFTC, who have been actively working to promote the equitable, ecologically sustainable use and conservation of natural resources, including NTFPs, in Viet Nam.

This international conference is held in the context of Viet Nam's rapid economic development and regional and global integration. Therefore, environment protection and the sustainable management of ecological systems have become urgent and important issues. The Government of Viet Nam increasingly recognises and is paying more attention to the important role of NTFPs in poverty alleviation and biodiversity conservation, especially in mountainous, remote and vulnerable areas.

This conference is one of the key activities within the framework of the NTFPs Sub-Sector Support Project Phase II 2002-2007, which was a collaborative project between MARD and IUCN, with financial support from the Royal Netherlands Government. The Royal Netherlands Government has supported Viet Nam in the field of NTFPs since 1998 via the pilot project Sustainable Utilisation of NTFPs 1998-2002. It has also expressed an interest in continuing to support Viet Nam's NTFPs sector through the implementation of a proposal entitled Pilot Programme for Support to the NTFPs Sub-sector 2007-2010, which was prepared by MARD with technical assistance from IUCN. On this momentous occasion, we would like to express our sincere thanks to the Royal Netherlands Government and people, especially the Royal Netherlands Embassy in Ha Noi, for their continued and meaningful support for NTFPs initiatives.

We also highly appreciate the efforts and commitments of the Viet Namese Government in natural resource management, including NTFPs development and conservation. On this occasion, we would like to thank MARD for its continuing efforts and effective and close cooperation and collaboration with IUCN in the development, management and conservation of natural resources, especially NTFPs.

IUCN is one of the most prestigious global organisations in the field of sustainable and equitable use of natural resources and biodiversity conservation. It was one of the earliest organisations to arrive in Viet Nam in the 1980s and has worked closely with Viet Nam on the National Biodiversity Conservation Strategy. IUCN has been actively working with relevant departments, research institutes and universities of MARD, in order to effectively support the NTFPs sub-sector since 1998.

Within the context of the continuing promotion and expansion of the achievements of the NTFPs Project Phase I, the NTFPs Project Phase II (2002-07) will be completed by end of June 2007, in order to move into a new period of supporting the implementation of the National NTFPs Strategy.

The NTFPs Project Phase II has achieved a great deal, including helping to develop the National NTFPs Strategy approved in 2006 by the government, and the National Action Plan on NTFPs; establishing two pilot provincial action plans developed for pilot sites in Quang Ninh and Ha Tinh; and developing NTFPs curriculum and training programmes at five forestry universities in Viet Nam, including a model on linking universities, and models on NTFPs contributions to poverty alleviation and biodiversity conservation. These results and lesson learned have been drawn upon and documented and will be shared with colleagues in the country, as well as international partners during this conference.

We hope that during the next four days, this conference will provide many opportunities for the results and experiences drawn from the NTFPs project to be shared with participants. This is also a chance for us to identify the successful elements of NTFPs initiatives in order to apply them to future NTFPs projects.

Ladies and gentlemen, in the context of Viet Nam's fast regional and global integration, the Government of Viet Nam has a policy of strongly promoting the socialisation of the forestry sector, including NTFPs development and conservation.

We are very happy to welcome to this conference so many different sectors, levels and departments, both central and local, and different geographical areas, including international participants from all over the region and the globe. We believe that through your active participation and contribution to this conference and NTFPs development and conservation, each and every one of you will contribute to the success of this event and ensure that NTFPs will be equitably and sustainably used while contributing to biodiversity conservation.

I wish you all a successful conference and the very best in health and happiness!

NATIONAL OVERVIEW

NTFPs Conservation and Development: A Strategic Task of the Forestry Sector in Viet Nam

Dr. Pham Duc Tuan, Vice Director, Department of Forestry, MARD

INTRODUCTION

With a monsoon tropical climate and complex geographical characteristics spanning many latitudes, Viet Nam has a wide variety of different types of forest and is rich in biodiversity. In almost all forests in the country, there are a substantial amount of Non-Timber Forest Products (NTFPs) species, including plants and animals.

Due to the diverse range of species they represent, NTFPs play an important role in enhancing biodiversity in Viet Nam. On the other hand, the exploitation of NTFPs is linked to the livelihoods of local communities living in and around the forests. Indeed, in many areas, NTFPs are the main source of income for mountainous people. Therefore, the harvesting of NTFPs contributes to poverty reduction, securing both food and income for local communities.

In recent years, economic reforms in Viet Nam, together with the country's integration into the global economy, have opened opportunities for the development of forest products, including NTFPs. However, as in other developing countries, the use of forest products is heavily dependant on existing natural resources, and little attention is being paid to the conservation and sustainable development of NTFPs. This is leading to a depletion of forest resources, decreasing forest biodiversity and negative impacts on the lives of forest-dependent people.

Viet Nam's forestry sector therefore considers the conservation and development of NTFPs a necessary part of the Forest Development Strategy 2006-2020, which was approved by the Prime Minister in Decision #18/QĐ-TTg, dated February 5, 2007. The detailed strategies for NTFPs conservation and development are presented in the 2006-2020 Forest Development Strategy approved by the Minister of Agriculture and Rural Development in Decision # 2366/QĐ-BNN-LN, dated August 17, 2006. This provides an important legal basis and the main direction for the Department of Forestry to provide guidance to lower level authorities for the successful conservation and development of NTFPs in Viet Nam's forestry industry.

CURRENT SITUTATION OF NTFPS CONSERVATION AND DEVELOPMENT IN VIET NAM

The Ministry of Agriculture and Rural Development (MARD) is the government agency in charge of forest protection and development. Assisting MARD in carrying out this task are the Department of Forestry and Forest Protection Department. MARD is the authorised focal point for CITES in Viet Nam, which is based in the Forest Protection Department, while the Ministry of Natural Resources and Environment (MONRE) is the authorised focal point for biodiversity conservation.

In terms of global initiatives, Viet Nam has joined some international conventions such as CITES, Desertification and RAMSAR, which are all related to NTFPs conservation.

There are now 129 special-use forests in the country, with a total area of more than 2.3 million hectares, accounting for 11.8 per cent of the total forest land and 6.7 per cent of the total natural land. There are 29 national parks in Viet Nam with a total area of nearly one million hectares, 62 nature

reserves accounting for 1.2 million hectares, and 38 protected forests with a total area of more than 100,000 hectares.

Currently, Viet Nam lacks a substantial amount of information on the NTFPs resources of each locality and ecological area across the whole country, including data on species, distribution, quantity, depletion and regeneration.

NTFPs production

NTFPs planting and harvesting in the forests occurs in 30 out of 64 provinces in Viet Nam. The total area of NTFPs harvesting in natural forests comprises 1.2 million hectares, while cultivated areas comprise 500,000 hectares. Major species planted or harvested include Bamboo, Rattan, Pine, Cinnamon, Anise, Cardamom, Red "boi loi", etc.

Currently, the most important issues that need addressing are that NTFPs production is still scattered and poorly planned, and breeding techniques have not been updated.

NTFPs processing, business and markets

According to rough statistics, there are now:

- 88 bamboo processing enterprises with a capacity of 250,000 tonnes per year;
- 40 rattan-processing companies with a capacity of 100,000 tonnes per year;
- around 700 villages specialising in bamboo/ rattan handicrafts, employing a total of 342,000 people; and
- 5 pine resin processing factories with a capacity of 15,000 tonnes per year.

In addition, there are many areas involved in the semi-processing of aromatic and medical plants. However, most NTFPs processing is conducted on a small-scale, is not located in a stable resource area, and uses outdated technology and poor equipment. This results in the production of low-quality products with limited packaging and branding and low competitiveness in the market.

Viet Nam's NTFPs are sold to nearly 90 countries, generating total annual export revenue of $200 million, which is mainly derived from bamboo and rattan handicrafts (more than 70 per cent). However, this export sector is still small and unstable, leading to fluctuating prices and an uncertain future.

NTFPs research, training and forest extension

At present, most NTFPs research, training and forest extension is conducted by the Forest Science Institute of Viet Nam (FSIV), but there are limitations in the institute's proficiency and equipment. NTFPs research is not comprehensive and cannot address or solve problems relating to particular issues or species.

There are now 15 forestry training institutions under MARD, 5 Forestry and Agriculture Universities under the Ministry of Education and Training, and 19 forestry training institutions at the provincial level, but none of these agencies are specialised in NTFPs development. Indeed, currently a distinct NTFPs curriculum has yet to be developed.

Furthermore, the forest extension system is not consistent and faces many limitations in capacity, resulting in limited training being provided to farmers in NTFPs techniques, and limited information disseminated to communities on NTFPs markets.

NTFPs management

- Some legal documents relating to the conservation of rare and valuable animals and trade in wild animals have been issued, as well as documents relating to the management of NTFPs harvesting and distribution. However, these documents are not yet complete or systematic enough for use in NTFPs management.
- Initiatives to encourage NTFPs development do exist in some general forestry policies, but are not yet comprehensive or strong enough for specifically developing the sector.
- There are still some gaps in management systems and there are almost no specialised NTFPs staff in the country. Statistics on NTFPs are not

distributed or updated and there is currently no NTFPs database.

VIEWS ON NTFPS CONSERVATION AND DEVELOPMENT

NTFPs conservation and development is conducted under the country's Forest Development Master Plan. Priority is given to NTFPs development in natural forests; however, it is necessary to encourage the domesticiation of NTFPs outside of forest areas.

It is generally agreed that the exploitation and development of NTFPs should be linked with biodiversity conservation through integrating advances in biological technology with sustainable forest product processing. As part of this process, people living near forests must be allowed to benefit from NTFPs development, in line with poverty reduction efforts, which will encourage them to protect the forest for future generations.

NTFPs material sources must be developed together with the forestry product processing industry. Specialised areas need to be established to efficiently produce NTFPs which are popular in international markets, and develop a range of products to meet domestic and local markets.

Targets by 2020

- Conserve NTFPs species of high economic and scientific value and limit the depletion of forest resources.
- Enhance the capacity and awareness of local people and communities in NTFPs conservation and development.
- NTFPs to become a forestry sub-sector and achieve the following targets:

o NTFPs production value to account for more than 20 per cent of the entire forestry production value;

o Revenue from NTFPs exports to increase by 10-15 per cent per year on average, and reach $700-800 million annually (equivalent to 30-40 per cent of revenue from timber exportation);

o NTFPs sector to employ 1.5 million people from rural and mountainous areas in NTFPs harvesting, production and training; and

o Income from NTFPs to account for 15-20 per cent of the total income of each rural mountainous household.

Directions for conservation and development of NTFPs during 2006-2020

- Strengthen insitu protection, especially for NTFPs populations and species in special-use forests.
- Promote existing protection solutions in botanical gardens, zoos or rescue centres for NTFPs species currently in danger of extinction.
- Develop appropriate and sustainable NTFPs harvesting in natural forests by strictly applying harvesting regulations and processes.
- Establish NTFPs material areas on appropriate scales, which are linked with processing locations selected on the basis of their comparative advantages over other ecological areas. Typical NTFPs products of each area should be identified in line with market demands, and sustainable harvesting practices utilised. The total area for NTFPs cultivation in 2020 should be double that of 2004 (equivalent to three million hectare through an average increase of 10 per cent per year). By this time, the area of natural forest for NTFPs harvesting should reach 2.2-2.5 million hectares, while NTFPs plantation forests will reach 700,000-800,000 hectares.
- Encourage activities related to NTFPs planting in natural and special-use forests, and the domestication of NTFPs in argicultural land.
- Prioritise the development of products from bamboo, rattan, resin, essential and medial plants.
- Encourage the development of breeding or artificial plantation centres for forest fauna and flora, which are authorised to conduct trade according to market demands.
- Focus on developing the infrastructure of small and medium NTFPs processing centres and

traditional handicraft villages, which use NTFPs as their main materials.

- Expand NTFPs markets in the country and abroad and promote commercial exchanges on NTFPs to identify important products for development.
- Develop comprehensive, enabling policies that mobilise resources from different sectors, with support from the government and international donors.
- Encourage households, individuals and communities to participate in the sustainable protecting, planting and processing of NTFPs.
- Improve the capacity and technical infrastructure of institutions and training centres involved in NTFPs research and training.
- Enhance the government's capacity to manage NTFPs.

The conservation and development of NTFPs is a strategic direction for the forestry sector, which contributes to economic development and poverty reduction by creating jobs for mountainous and rural people, while conserving the forest biodiversity of Viet Nam.

To enable the forestry sector to carry out NTFPs conservation and development, it is necessary to conduct a range of comprehensive initiatives involving awareness-raising, policy development, capacity building, and mobilising resources from society to invest in NTFPs development. Furthermore, international support is crucial for NTFPs conservation and development in the short-term, as well as for the sustainable future of these species.

INTERNATIONAL OVERVIEW

Gaining Much from Little: How 'Minor' Forest Products Can Have a Major Impact on Poverty Alleviation and Promote Biodiversity Conservation

Dr. Katherine Warner, The World Conservation Union (IUCN)

Until recently, tree and forest products were mistakenly perceived as providing no more than a minor portion of income to rural communities. Now, however, there is a better understanding of the potential of forest and tree products for income generation for both communities and nations.

Table 1: Tree and Forest Products

- Fibres and Flosses: bamboo and rattan (furniture, woven products), handicrafts, toothpicks, fibres for weaving fabrics
- Edible Plant Products: fruits (fresh, dried, packaged), bamboo and rattan shoots, vegetables and ferns, nuts, mushrooms, juices, liquors, teas, spices
- Resins and gums: pine oleoresin for chemical industry, damar (Dipterocarpus spp.), benzoin (Styrax tonkinensis) for perfumes
- Tannin and dyes: many forest plants are used in natural pigments for dyeing cloth
- Industrial oils: varnish etc.
- Essential oils: Vetiver oil (*Vetiveria zizanioides*) and eucalyptus oil for fragrance and industry; cinnamon oil and star anise (*Illicium verum*) for the food and beverage industry
- Insecticides: Sassafras (*Cinnamomum parthenoxylon*), neem (*Azadirachta indica*)
- Medicinal plants: for both human and livestock health
- Ornamental Plants: orchids, palms for floral arrangements, etc.
- Animal Products: foods such as frogs, crabs, lizards, snakes, insects, ant eggs, fish, small rodents and mammals; honey, horns, scales and bones used as medicines; feathers for ornamental purposes; sticklac (*Laccifer Lacca*) used in paints, varnish, dyes, electrical insulation; and mulberry for silkworm production
- Wood products: fuel wood, charcoal, briquettes, construction timber, handicrafts, furniture, coffins, bee hives and specialized markets such as musical instruments

There is growing agreement that Non-Timber Tree and Forest Products (NTFPs) play an important role in the livelihoods of the rural poor as a source of food, medicine, construction materials, and income (see Table 1). It has been estimated that there are more than 60 million highly forest-dependent people in Latin America, West Africa, and Southeast Asia, with an additional 400-500 million people directly dependent on these natural products.

Access to forest resources helps rural households diversify their livelihood base and reduce their exposure to risk. Earnings from forest products are often important as a complement to other income. Very large numbers of households generate some of their income from selling forest products, often when farm production is not enough to provide self-sufficiency year round. Income from forest products is often used to purchase seeds, hire labour for cultivation, or generate working capital for trading activities. For the poorest households, NTFPs can play a critical role in providing both food and income.

As forested areas throughout the world continue to be under pressure through land use changes and logging, their preservation is increasingly being linked to a strategy of integrating forest conservation with sustainable economic activities, such as the development of NTFPs enterprises. An underlying assumption is that tree and forest product entrepreneurs will conserve and protect forest resources, if they receive the economic benefits from sustainable forest use. Other assumptions are that markets for NTFPs are changing. Free market systems are penetrating into rural areas all over the world, including in countries with a tradition of centrally planned economic systems. This provides more access to national, regional and international markets. The penetration of the market economy extends into all aspects of rural life and forest degradation is increasing. Therefore, forest dwellers and tree and forest product entrepreneurs will prosper only if they can adapt to these changes and learn new skills, thus becoming real economic actors rather than bystanders or victims.

However, while there is an emerging consensus that forest resources such as NTFPs can play an important role in poverty alleviation and environment conservation, documented successful initiatives are relatively few in number. One of the lessons learned is that an *integrated approach* is needed and that there are a number of factors (and this is one of the key areas of discussion for this conference) that are critical for success. One of the critical success factors which I will mention here is that initiatives that attempt to link forest conservation and development activities requires personnel trained not only in conservation and production, but also in the processing and marketing of tree and forest products. Yet training and expertise in processing and marketing, especially in marketing, is relatively rare.

Marketing is not only the movement of goods, but also a process of exploring which products potential customers will purchase, and then producing, processing, promoting and distributing them at a profit. Despite increased interest and greater need, there is still widespread misunderstanding about the role of marketing and its position in the structure and management of an initiative. Marketing is often misunderstood to be the same as selling. Selling is trying to make the customer buy the available product. Marketing includes not only selling, but also, as noted above, the producing, processing, promoting and distributing of products. The essential principle of marketing is that producers (and processors) succeed by producing what can be profitably sold rather than easily produced. We need to proactively develop the marketing skills and expertise of communities and programme and agencies staff so that sustainable economic benefits are achieved and incentives are in place for sustainable resource management.

We do have success stories in which the poor have captured the opportunities provided by forest products to make meaningful changes in their lives. These successes highlight integrated approaches that look beyond the forests, and address the needs of local communities, including access to forest resources and markets.

A success story from Lao PDR[1]

About 5 million people, or 80 per cent of the population, in Lao PDR pursue rural livelihoods, within which NTFPs play a significant role in food security, income generation, and the provision of numerous other non-food and non-cash inputs to households.

After rice, wild forest foods dominate the daily diet. More than 450 edible species have been identified, and collectively they provide the bulk of animal protein, leafy green vegetables and micro-nutrient intake of rural households (Clendon, 2001; Foppes and Kethpanh, 2000a, 2000b, 2004; WFP, 2004). In remote upland areas, households commonly experience rice shortages for up to three months. NTFPs provide food security through either direct consumption or through their barter or sale to obtain rice. NTFPs are even more important in bad times when crops fail or are destroyed.

A nationwide survey of forest-based food security of the World Food Programme (WFP) of the United Nations in 2004 found that all villages in the country had some dependency on forests for food, and that about 41 per cent of all villages were dependent on food obtained from forests within and around Lao PDR's national system of protected areas (WFP, 2004).

Nationwide it has been found that the dependency on forests for domestic consumption and income generation purposes is highest for the poorest households and of greatest importance to women because they dominate (non-hunting) the collection and management of NTFPs (Foppes and Kethpanh, 2000a, 2000b; Ingles et al, 1999; Broekhoven, 2002; Morris et al, 2004)

From 1995 to 2001, The World Conservation Union (IUCN) and the National Agriculture and Forestry Research Institute (NAFRI) of Lao PDR, with funding from the Government of the Netherlands, implemented a project to promote the sustainable use of NTFPs. In 2006, with funding provided by the World Bank/ PROFOR, there was an opportunity to do a follow-up assessment of the project and its impact. The findings were encouraging. In one pilot village (Ban Nampheng), food security has been achieved, annual cash incomes to households are significantly higher, people are healthier and all major development indicators for the village show marked improvements. The benefits from the interventions have been distributed equitably and a significant proportion of households have graduated out of a locally-defined poverty situation.

This was a significant change from 1996 when the project began. The situation at that time was one in which NTFPs were being over-exploited and poor prices were being received from traders because local collectors:

- had taken loans from traders[2] during rice deficit periods, which were re-paid later with agreed quantities of NTFPs;
- lacked secure access rights to the forests and had to compete with outsiders during peak collection periods;
- lacked adequate market information;
- were adding little value to products through grading and processing;
- were in open competition with other sellers; and
- sold valuable NTFPs by the bundle, rather than by weight.

Utilising an integrated approach, the project's interventions (see Table 2) included a rice bank, facilitating the formal recognition of rights of access (including rights of exclusion) to the forest by the community, forming marketing and women's savings group, grading and processing of NTFPs,

1 This case study is drawn from Ingles, A.W., S. Kethpanh, A. S. Inglis and K. Manivong. 2006. Scaling Sideways and Up-ways: *Identifying factors that affect the adoption of forest-based livelihoods development interventions in Lao PDR. (Draft final report). PROFOR/World Bank, Washington, D.C.*

2 Although the loans provided by traders was seen as a negative "service" locking asset and cash poor people into low price agreements at vulnerable times of year, some villagers still commented on this service in a predominantly positive light.

providing drinking water supplies, and some experimentation with domesticating NTFPs.

Notable changes include the attainment of food security, the eradication of child mortality, the doubling of school enrolment rates (gender balanced), and increases in livestock. The village has also benefited from new infrastructure, equipment and services that have been supported

Table 2: Main NTFPs Project Interventions in Ban Nampheng

INTERVENTION & PURPOSE	KEY RESULT
Village rice bank: a store of rice and an organisation established to allow the village to cope with their rice-deficit period better and reduce the pressure to collect NTFPs to pay off loans to traders.	Replaced the need to over-exploit NTFPs resources and sell them too cheaply to traders because of loans taken to buy rice during deficit periods
Forest land allocation and collaborative management: land-use planning and an agreement made with the government for village management of specific forest areas and for spatial confinement of shifting cultivation.	Provided secure forest access and use rights to a defined user group, allowing for (better) harvesting rules, off-take regulation, and investments in forest management.
Marketing groups: An organisation was established that developed agreed rules for harvesting and selling bitter bamboo shoots (*Indosas sinensis*) and cardamom pods (*Amomum spp.*). The organisation also created and managed a NTFPs development fund generated through a locally applied tax of 10 per cent on NTFPs sales.	Organised collusion in price-setting, enhanced knowledge of market prices, grading and processing (see below) and selling by weight using scales resulted in significant increases in income to households and better returns for labour inputs[3]. A successful village development fund was created. The organisation continued to facilitate further development of marketing strategies and facilities.
Grading and processing: Capacity built for adding value to cardamom pods (*Amomum spp.*) used in the production of Chinese medicine.	Significant increase in income from cardamom sales because of improvements in the quantity and quality of the product through drying and grading.
Drinking water supplies: A local drinking water supply scheme was established	Reduced time spent by women and children in fetching water, allowing more time for participation in NTFPs collection and in marketing and savings groups.
Women's savings group: An additional organisation was created to encourage the effective use of additional cash circulating in the village.	Provided credit for local initiatives and strengthened collaboration within the village.
Domestication of important NTFPs species: Planting trials were undertaken for three NTFPs species Paper mulberry (*Broussonetia papyrifera*), Cardamom (*Amomum spp.*), and Eaglewood (*Aquilaria spp.*)	A marginal increase in the resource base and some raised awareness about the concept of domestication generally.

3 For example, the local price for cardamom was raised from 500 kip per kilogram to 35,000 kip per kilogram in 1998, and although prices later dropped, prices of around 12,000 kip per kilogram were sustained over time (Morris et al. 2004) (US $ 1 = about 10,000 kip)

by the NTFPs project, the NTFPs development fund established by the marketing group, and indirectly through private loans made from that fund.

In regard to forest conservation, both local users and government officials have consistently reported that the condition and productivity of forests allocated to Ban Nampheng have improved since 1996. Illegal cutting of timber is reported to have decreased because of increased food security and the enhanced returns from NTFPs collection. While the value of NTFPs's from the forests has increased, increasing the general pressure for harvesting, villagers believe that they have greater control over such pressure through the allocation of exclusive use rights

to them and the establishment of harvesting rules among the user group (Morris et al., 2004). In addition, grazing pressure on surrounding forests has been reduced because of new investments in animal husbandry that have changed livestock numbers. There are fewer cows and goats, and instead there are more chickens, pigs and buffalo. In 2006, it was found that the sale of NTFPs still dominated household income sources, providing approximately 60 per cent of cash income to households, mainly from the sale of bitter bamboo shoots. The next most important source of cash income was animal husbandry (20 per cent), followed by cash cropping (15 per cent) of sesame seeds and corn.

When reviewing the long-term results of the project, it can be argued that the main reasons why poverty rates were reduced in Ban Nampheng were that:

- Food security was achieved, mainly through the NTFPs project's rice bank, forest land allocation and marketing group interventions, which increased the income from NTFPs sales to buy rice;
- Available labour increased through improvements in health-care and nutrition;
- Returns on labour from NTFPs collection and sale were increased significantly; and
- Additional labour was applied productively to the collection and sale of NTFPs.

In addition to its major role in helping to reduce poverty levels in the village, the NTFPs project's interventions also provided a basis for further economic development through the establishment of an NTFPs Marketing Group and NTFPs Development Fund that paid for improvements in formal and informal education and provided credit to support private equipment purchases and investments in agriculture, trading, transport and animal husbandry. The substantial and robust increases in NTFPs-based incomes also allowed for private investments and livelihood diversification.

It is clear that the NTFPs project's interventions have had a significant, positive and long-lasting impact on Ban Nampheng village. The combination of the NTFPs-based interventions and the subsequent and related activities undertaken by the villagers themselves have provided resources, capacity and options for further development. In this way, NTFPs development has provide households with an "escape ladder" out of poverty.

Lessons learned

The lessons learned are that properly planned and executed NTFPs interventions are highly appropriate to supporting the sustainable development of forest-dependent communities because:

- Food security can be achieved through NTFPs-related interventions;
- Cash income to households from NTFPs sales can be increased and maintained over time, under collaborative agreements for sustainable forest management;
- Benefits can accrue equitably within a village because the poorest groups can use available labour to take advantage of the economic opportunities provided by NTFPs development;
- Women can participate readily in NTFPs development due to existing gender roles, and through such participation they can address

specific issues concerning women and become more politically organised;

- Households can graduate into higher wealth classes and maintain the gains based on both commercial and subsistence-oriented NTFPs activities; and
- New economic activities can be funded by private and common funds generated by enhanced NTFPs sales.

Constraints for small-scale enterprises

It should be noted that in the Lao PDR, as elsewhere, communities have not formed a marketing enterprise. Instead, the groups improve harvesting and selling. There are significant constraints and barriers for small-scale enterprises to effectively link to markets and compete successfully. Low-income producers face many disadvantages due to poverty itself, as well as a lack of education and infrastructure (Scherr, White and Kaimowitz 2002; 2004). So the questions now to be asked are: How can we make markets work for low-income producers and what is needed to capture the emerging opportunities for forest products by the poor?

One of the primary concerns is that the poor will be pushed aside when commercial opportunities appear. In order to create space for the poor, pro-poor forest-based projects and programmes need to proactively focus on identifying 'the measures that will enable the poorer to continue to participate' (Arnold 2001). Beyond laying the technical groundwork, support programmes such as the Lao case study, can include measures to support the participation of the poor by providing or enabling financial incentives, training, micro-credit, and market access. Successful programmes have, for example, commonly supported the development of local associations and access to financing for local forest-based businesses.

Microfinance that supports small-scale producers is critical, but is often not available in rural areas, especially for small enterprises whose owner/ members have few assets. This microfinance gap is now well recognised and creative mechanisms need to be successfully piloted.

Forming partnerships with the private sector is a key area in which government and non-government supported projects are often weak. Community enterprises are often protected by projects. Products are 'made to work' through project support of infrastructure, financing at favourable rates, and uncompetitive pricing. While this may 'work' in the short term, it creates unsustainable enterprises. As noted above, project personnel often lack marketing experience and are more comfortable with project activities and objectives related to conservation or social concerns. Yet it is effective responses to the demands of the market that will ultimately determine the success of small enterprises and the viability of forest products as a means for poverty reduction. The private sector has to be engaged as a partner in poverty reduction.

How can we encourage the private sector to engage? If we look at this and similar conferences, there is scant representation of the private sector. All but a few of us here are working in the public sector (government agencies, multilaterals, bilaterals) or in NGOs. Why is the private sector not here? In part, this may be because of our lack of experience in working with it. Our task is to identify those that share our concerns and objectives, and form partnerships.

However, to maintain a successful partnership we have to improve our understanding of the private sector, and what it values in a business partner. This is particularly relevant in relation to private sector demands that 'products are delivered on time in the quantity and quality contracted' (see also Forest Trends 2003). Such expectations are often a challenge for many enterprises.

Summary

NTFPs initiatives have an important role in poverty alleviation and conservation of biodiversity. For this role to realised, an integrated approach is needed that includes a wide range of activities. We need to promote and support the sustainable

use of forest resources, with a special focus on NTFPs, technical assistance, microfinance, business development support, markets that 'work for the poor', and policies that are not barriers to local market participation. We also have to promote policy and regulatory changes that will enable small producers to have access to forest resources and services such as credit, so that they can effectively manage their natural resources, participate in markets and move out of poverty.

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NTFPs PROJECT INTRODUCTION

Introduction to a NTFPs Project in Viet Nam

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BACKGROUND

Policy framework

Forest coverage in Viet Nam fell from 43 per cent (14.3 million ha) in 1943 to 28.2 per cent (9.3 million ha) in 1993. At the time, it was estimated that around 30 per cent of the population lived in and around forests and mainly depended on forest resources for their livelihoods.

In Viet Nam, there are three types of forests - production forests, protected forests and special-use forests. In 1991, the Government of Viet Nam issued the Law on Forest Protection and Development, which was revised in 2004. In July 1993, the Land Law was issued, which provided regulations on land management, land use planning and forest land allocated for households and enterprises (this law was revised in 2003). Decision 661/TTg of the Prime Minister was issued on July 29, 1998 to set out the goals, tasks, policies and organisations involved in the New Forest Plantation Programme, which covered an area of 5 million ha. Decision 202/TTg dated May 2, 1994 by the Prime Minister concerned forest allocation and protection, while in 1995, Viet Nam issued its Biodiversity Action Plan.

Institutional framework

The Ministry of Agriculture and Rural Development (MARD) has decentralised some important functions to the lower level of government. For example, the management of the Department of Agriculture and Rural Development's (DARD) Agriculture Extension Centres and Forestry Extension Centres was assigned to the Provincial and District People's Committees. However, the capacity of these level are limited, thus, the agroforestry extension services did not meet the requirements. There were insufficient numbers of proficient technical staff in some scientific research institutions and agricultural producers were not well equipped with enough knowledge and information regarding their products' value and quality. The management and business capacity of these organisations and producers was also low.

Until recently, the benefits from forests for communities came predominantly from the production of timber. However, this view changed when a government decree was issued in1997 on natural forest closing. At the time, insufficient understanding of the various values of Non-Timber Forest Products (NTFPs) by managers and planners led to a lack of interest in encouraging local communities to develop and change their approaches to the sustainable use of NTFPs. Similarly, there was not any recognition of the important of forest protection to maintain the ecological conditions for the development of NTFPs.

Therefore, there was an urgent need to develop a community participatory NTFPs managing system, which provided support in market analysis and product development.

PROJECT FORMULATION

Accordingly, a project on the sustainable use of NTFPs in Viet Nam was formulated through cooperation between The World Conservation Union (IUCN), the Government of Viet Nam (through the FSIV) and two local non-government organisations (ECO-ECO and CRES).

The NTFPs project was divided into two phases.

Phase 1: Project on the sustainable use of NTFPs in Viet Nam (pilot project for NTFPs)

Objectives and implementation

The project's objective was achieving forest and biodiversity conservation through promoting the use of NTFPs in livelihoods and ecological sustainability. It was scheduled to run from July 1998 to July 2002, (but was officially launched in December 1998), and comprised one national component and two practical demonstrations in Ba Be (Bac Kan province) and Cam Xuyen (Ha Tinh province).

Project initiatives

- Capacity building for FSIV and participating organisations.
- Set up at each demonstration site the appropriate management system to promote and maintain the sustainable use of NTFPs.
- Develop and carry out activities to enhance awareness of the value of NTFPs, especially for the NTFPs users at the field sites.
- Contribute lessons learned to the development and improvement of effective NTFPs management systems for forest protection and rural development.

Achievements

For the first time ever, an overview of NTFPs sector was developed, including species listings and an analysis of the existing laws and policies on NTFPs. A strategic development plan for FSIV was developed and the Information Management System (IMS) relating to NTFPs was set up. Staff from FSIV and participating organisations were trained and provided with knowledge and skills in plan development, Rural Rapid Assessment (RRA), rural assessment with community participation (PRA), market analysis and development (MA&D), bioforest techniques and community forest management.

Some methodologies on studying, planning and providing important support to rural conservation and development based on NTFPs were tested and adjusted to suit the Viet Namese context, i.e. NTFPs market analysis and development, Participatory Action Research (PAR); planning and use of rural land (LUP); and developing planting models for six species of NTFPs.

In terms of awareness-raising activities, the conservation and development of NTFPs was declared a priority in the Forestry Support Programme and Forest Plantation Programme, and training was provided for NTFPs users in local communities.

From experiences gained through the project, 26 lessons learned were disseminated in a flexible but clear manner to enable other projects to avoid similar mistakes. Finally, the NTFPs pilot project established an effective cooperation mechanism between project partners comprising government and non-government organisations.

Phase 2: NTFPs sub sector support project in Viet Nam

The project was formulated following revisions in Viet Nam's socio-economic development policies and changes in the institutional environment, including the Forest Development Strategy (2002) and Forest Sector Support Programme (2001). Awareness of NTFPs had changed a great deal and they were increasingly being considered as tools for poverty reduction and economic development.

However, there were still some gaps in the sector including gaps in knowledge to support NTFPs development and implementation at both the national and provincial levels. There were also gaps in knowledge regarding the conservation of NTFPs species, natural resources and prioritised species. The current status of resources and supply/demand trends was not known, there was a lack of models integrating conservation and poverty reduction, and indigenous knowledge of the uses of NTFPs had not been sufficiently studied.

There were also gaps in the capacity to support the development and implementation of policies

at the national and provincial levels. Knowledge regarding establishing NTFPs development strategies was lacking, as well as limited capacity for conducting impact assessments and analyses and establishing partnership networks for NTFPs management and information dissemination.

Together with incorporating the lessons from the first phase of the project, a suitable action plan was required, whose effectiveness could be tested through the project's activities.

Within that context, the NTFPs Support Project in Viet Nam was established to build upon the positive results achieved during the first phase in terms of geographic, thematic, methodological and 'action plan-learning' approaches.

Objectives and implementation

The project was scheduled to run from July 2002 to July 2007, but was not officially implemented until April 2003. Comprising six project sites over five provinces (Bac Giang, Quang Ninh, Ha Tinh, Quang Binh and Quang Tri), the objective of the project was to launch an initiative to support the Forest Sector Support Programme through improving organisations/institutions' capacity for research and management by supporting the sustainable and ecologically equitable use of NTFPs for biodiversity conservation. Through this focus, the project aimed to improve the living standards of poor people living in and around the forests and develop the national economy.

Initiatives

- Improve policy framework and national strategies related to NTFPs development.
- Continue to strengthen the capacity of FSIV and relevant organisations to develop and implement national policies and strategies for sustainable NTFPs development.
- Establish an Action Learning Fund to provide financial and technical support to institutions and partners carrying out research in NTFPs development for poverty reduction and biodiversity conservation programmes.
- Apply suitable approaches and existing techniques to improve the capacity for NTFPs conservation and development among partners and local communities. These approaches are expanded through forestry extension systems.
- Collect information, experiments and demonstrations of suitable NTFPs management systems in localities.
- Develop an NTFPs network in Viet Nam.

Achievements

In terms of capacity building in planning and research, the project has achieved the following outcomes:

- contributed to the development of the Forest Sector Support Programme and New Forest Plantation Programme
- supported the Department of Forestry to develop the National Strategy for NTFPs Conservation and Development by 2020, which was approved in August 2006, and the NTFPs Action Plan by 2010;
- developed an NTFPs Action Plan at the provincial level in Ha Tinh and Quang Ninh provinces (approved in June 2007);
- supported five universities in compiling and developing curriculums for five subjects concerning training NTFPs specialists and supported students conducting graduate theses on NTFPs;
- supported 32 different institutions through two Action Learning Funds in carrying out 44 research projects related to NTFPs management, conservation and development in 23 provinces;
- published the NTFPs Source Book, which contains information on nearly 400 major NTFPs species in Viet Nam, thereby supporting the management, conservation and economic development of NTFPs; and
- supported the establishment of NTFPs Experimental Stations in Quang Ninh province and a NTFPs library.

In terms of transferring methodologies for sustainable NTFPs development, the project achieved the following outcomes:

- transfered the methodology on NTFPs Market Analysis and Development, Gender and Livelihoods to field officers and local staff at field sites;
- transferred land planning methodologies at the village level to households at project sites;
- trained trainers provided to forest extensionists in the provinces and districts of the project to support knowledge dissemination;
- trained thousands of people participating into the project in Participatory Research Assessment (PRA), planting techniques, sustainable harvesting, and conserving and processing some NTFPs species;
- developed trial models for NTFPs species conservation and development in cultivated forest land and farmland for more than 10 species including rattan, *Morinda officinalis, Holarrhena antidysenterica*, *Pimela alba*, *rhamnoneuron balansae*, *dioscorea persimilis, machilus odoratissima*, *desmodium styracifolium*, *dianella ensifolia*, *amomum longiligulare*, *ardisia gigantiflolia*, *jasminum subtriplinerve*, *Lyndera myrrha*, etc.);
- developed the model for insitu conservation (reinvigorated a 30ha rattan forest in Van Don, allocated separate land for NTFPs planting on a 63-ha area with rattan, morinda officinalis, pimela alba, rhamnoneuron balansae in Hoanh Bo, supported the rattan sustainable harvesting plan in a nine-ha rattan natural forest in Minh Hoa, Quang Binh province, and renovated 7.2 ha of mixed garden with NTFPs plants in Cam Xuyen districts);
- developed a model for processing Linh chi mushroom and *Myrica Farguhariana* fruit in Van Don, developed a model for a bamboo/ handicraft producing village in Van Don and, and developed village rattan handicraft production in Cam Xuyen and Tuyen Hoa; and

The project generated substantial interest among local households, with their total participating time comprising more than 3, 500 hours through activities such as breeding NTFPs, developing models for NTFPs conservation and development, and exploring processing models. A total of 1,957 households participated in the three field sites in the central region, while 1,500 households participated in the north, excluding households under the two Action Learning Funds.

In terms of NTFPs awareness-raising, the project achieved the following outcomes:

- A NTFPs network was set up in partnership with the Viet Nam Forest Scientific and Technical Association with the voluntary participation of approximately 50 organisations and individuals, through which experiences and information on NTFPs are shared and disseminated;
- Workshops were organised on subjects such as Viet Namese bamboo, the sustainable marketing of NTFPs in Viet Nam, and NTFPs conservation and development in Viet Nam;
- A website was developed, together with a NTFPs Newsletter, which is issued every quarter;
- Books were published on *Amomum* (Sa nhan), *Morinda officinalis* (Ba kich), Pine resin, Agarwood (Tram huong), *Machilus* (Boi loi do) to support researchers and forest extentionists in their work;
- Planting Technical Guidelines for eight NTFPs species in central Viet Nam were developed and published, together with the Supporting Document for Forest Extension, which contains information on 22 NTFPs species in the north-west of Viet Nam;
- 20 traditional herbal gardens were established in health stations at the communal level and 10 botanical gardens were planted at high schools to improve community healthcare and awareness of NTFPs; and
- More than 40 bookstores were established at the village level containing more than 300 booklets.

CONCLUSION

To sum up, after the two phases of the project, which each had different objectives, many valuable results and lessons learned have been achieved, which actively contribute to raising awareness of the various benefits of NTFPs in society. These outcomes strongly support the development and successful implementation of socio-economic development policies, the Law on Forest Protection and Development, and the Forest Development Strategy.

Papers of the Conference

THEME 1 :

MAKING THE LINK - NTFPs IMPACT ON POVERTY

NTFPs Impact Poverty, National Development and Biodiversity Conservation by Creation of Livelihood Assets

John Raintree, Nguyen Thi Nghia and Bui Thi An[1]

The Non-Timber Tree and Forest Product (NTFPs) Sub-sector Support Project in Viet Nam seeks to support the use of NTFPs for biodiversity conservation, improving the livelihoods of poor people living in and around forest areas, and national economic development.

In addressing such goals, international literature gives great prominence to the idea of sustainable livelihoods. A key element of the Sustainable Livelihoods Framework is the concept of "livelihood assets" or "livelihood assets", of which the following five types are recognised[2]:

TYPE	DEFINITION
Human Assets	Skills, knowledge, labour and capacity to work, which vary according to household size, skill levels, education, leadership potential, health status, etc. Human capital is a prerequisite for using the other four types of livelihood assets.
Natural Assets	he natural resources upon which people rely for their livelihood, such as land, trees, crops, livestock, genetic resources, and natural and agricultural biodiversity.
Social Assets	Social relationships developed through membership, interaction, trust, etc. that increase people's ability to work together, facilitate cooperation, reduce transaction costs, increase access to information, influence and empower, activate formal obligations, and support informal safety nets among the poor.
Financial Assets	Savings, credit, jobs and employment opportunities, and non-earned income used by people to achieve their livelihood objectives and invest in new livelihood assets.
Physical Assets	Assets Infrastructure, equipment and other physical goods that enhance productivity and income.

This is a widely accepted framework, but what evidence is there that these concepts have practical relevance in Viet Nam?

The view from the village

The results of a recent participatory rapid assessment survey of a sample of villagers participating in the NTFPs Sub-Sector Support Project can help answer this question. The purpose of the survey exercise was to obtain the villagers own assessment of the relevance and impact of NTFPs models and activities promoted by the project. To do this, a variety of participatory research techniques were used, including card-sorting and ranking of models and activities, and open-ended focus group discussions, which were

1 NTFPs Sub-Sector Support Project in Viet Nam

2 Adapted from the Sustainable Livelihoods Glossary http://www.livelihoods.org/info/guidance_sheets_rtfs/sect8glo.rtf

supplemented by household and key informant interviews to obtain unbiased information on the villager's own assessment of the NTFPs models and activities.

Although the survey was not specifically designed with the Sustainable Livelihoods Framework in mind, the results provided surprisingly strong evidence that the NTFPs inputs have had a positive impact on the villagers' livelihood assets.

The most explicit evidence of this linkage can be seen in the comments recorded at the end of the focus group sessions, when the groups were asked to express their feelings about any changes caused by the project.

Asset Type	# of hits	% of total hits
Human	59	44%
Natural	31	23%
Financial	23	17%
Social	21	16%
Physical	0	0%
Total	134	100%

Of the 103 separate statements expressed by the 16 focus groups in the eight sample villages, 97 per cent made clear reference to at least one of the asset types. When the statements were broken down into their basic elements and compared systematically with livelihood asset categories, the number and percentage of "hits" were as follows:

In the villagers' assessment, the biggest impact through the project was on human assets, followed by natural, financial and social assets. The only asset category not mentioned by the villagers' was physical assets, which is not surprising since the NTFPs project is not an infrastructure project.

Human assets

This asset category permeates the villagers feelings about the project's impacts, which is to be expected since knowledge, skills and the capacity to work in new ways and make more productive use of household labour are the essence of the NTFPs models and training inputs. As human assets are a prerequisite for using other asset types, there was also a lot of overlap with comments under the other categories.

People commented that they especially valued the increased knowledge and capacity they received through the project. Comments about knowledge ranged from the specific: "knowledge of planting and grafting tram", "learned from the experience of planting rattan and huong bai" and "know how to prevent disease among NTFPs species"; to the general: "knowledge of agroforestry production", "knowledge of NTFPs conservation and development", "know how to earn [a living], change the cropping system", and "improved understanding due to use of technical books". Acquired capacities included: "increased capacity for using land and expanding land area to grow NTFPs species", "increased capacity for procuring assets for the household," and "increased working capacity among commune and village cadres".

Of special interest were the comments indicating the adoption and spread of the new knowledge ("all HHs made a work plan to plant rattan as a fence around their forest hill garden"), impact on preserving indigenous knowledge ("recovery of knowledge regarding the use of medicinal plants"), and impacts on children and the value of knowledge ("children are also interested in NTFPs", "the rate of children dropping out of school has been reduced", "now all children go to school"). All of these comments were spontaneous and unsolicited.

Natural assets

All eight villages commented on the project's impacts on natural assets. Some of the comments were about creating new assets (e.g. "project supplies seedlings and techniques to grow rattan and huong bai"), or changes in the quality of natural assets through replacing existing crops with higher value NTFPs ("rattan and huong bai can replace poor producing crops like tre hop bamboo and cassava"). These impacts were described as "land-saving" because they return a higher value per unit of land.

A surprising 84 per cent of the natural assets hits were about the impacts on forest conservation made possible by the NTFPs models and activities. This finding might seem "too good to be true" if it were not for the fact that the content of comments from widely separated sources triangulate well with other types of data, are coherent, and have an internal consistency that give them a real sense of authenticity.

The comments acknowledged impacts from the whole gamut of conservation measures, from awareness-raising ("The water source is exhausted, and Tau timber is heavily exploited, resulting in landslides. That is why it is necessary to protect people's livelihoods."), to classical protected area exclusion measures ("A protected area has been established, resulting in outlawing the destruction of the forest"), to in-situ conservation ("Local people are changing their awareness regarding the sustainable exploitation of NTFPs in natural forests" and "Forest enrichment counteracts natural forest destruction and preserves natural forests for the next generation through long-term economic management"), to ex-situ domestication ("Grow huong bai and rattan instead of going to the forest to collect it" and "Can now conserve some NTFPs species that are scarce in natural forests such as rattan and boi loi"), to livelihood substitution measures ("Women have learnt new techniques to plant NTFPs so they spend their time gardening and have reduced the time spent collecting NTFPs in natural forests").

Comments regarding a reduction in the number of visits to natural forests comprised a dominant theme, and many different reasons were cited. Perhaps the most succinct summary of the project's impact on conservation was the statement that "Time spent on the models results in less visits to the forest."

Others gave more elaborate explanations, such as this one on the impact of high-efficiency cook stoves: "Before the NTFPs project, women had to collect firewood ten times a month. Now they only spend one time collecting firewood in the forest and can invest their time in the fruit garden and selling [products] in local markets."

Other comments helped put the NTFPs-related conservation measures into proper historical perspective with respect to wider development changes: "Ten years ago, charcoal-making was an important activity for livelihoods, but now there are only three households that make charcoal because of increased enforcement in the protected area and because young men can get higher paying jobs in the south (e.g. in dam construction) and are not interested in charcoal-making."

Financial assets

Positive comments about impact on financial assets were volunteered by seven of the eight villages, with 11 out of the 23 hits comprising direct statements that the project had created or increased income or employment opportunities. Early benefits were highlighted in the comment that "Beekeeping yields immediate economic benefits," while several others emphasized the stable, long-term nature of the employment opportunities created by NTFPs. Villagers in Kim Trung linked this to conservation benefits by saying that long-term income from rattan planting would allow the local people to reduce logging in the future (the rattan had not yet reached harvestable age). Links between gains in financial assets and labour use (a human asset) were flagged in the comments "Busy but income increased" and "Landless households will have opportunities to sell labour" (the latter also implies the creation of new social assets). A more global kind of impact was highlighted in the terse comment from Am village citing "Improved management and utilization of cash for household economic development."

Not all the comments were positive. A respondent from Kim Trung, the poorest village in the sample, commented that the investment from the project was too small, which made it difficult for some households to select a model. This highlights the fact that the poorest villagers may in the short-term lack sufficient cash, land, labour and other assets to allow them to develop the long-term financial assets of NTFPs. A positive response to this dilemma was suggested by a woman in Dai Lang, whose hope was that the project would support handicraft manufacturing in the next

phase. NTFPs processing does not require land, but it creates domestic employment opportunities compatible with child care and other household responsibilities.

Social assets

All villages had something to say about project impacts on social assets. Most of the recorded comments identified positive impacts on social relationships in households, the immediate community, and in the wider national community. Comments about the household were mainly about improved gender relations: "Increased awareness about gender equality", "Gender division of labour in the family is more reasonable", "Created employment, solidarity in the family, better labour arrangement in the household", and from an ethnic community known for its gender imbalances, "The husband changed his behaviour in supporting his wife to attend a literacy class."

The gender theme expanded at the community level with comments such as: "Role and voice of women in the HH and community increased" and "Women are interested in literacy classes and have more self-confidence when they attend village meetings or go outside the village," indicating the general empowerment of women.

Another major theme at the community level was increased interaction and cooperation between households in sharing experiences about the models: "Local people are very happy; they feel more friendly sharing experiences regarding planting NTFPs with each other. We always ask each other 'Why is your model growing better than others?'", "HHs who have no models can copy models from HHs with a model," "Non-supported HHs can learn from the experiences of supported HHs. Up till now, 90 per cent of households have planted khoai mai" (even though only 28 per cent of village households officially participated in this project model). This last comment is indicative of the rapid adoption and spread of this particular model through social interaction at the community level. Even households who are unable to adopt the models need not be left out because, as one person commented, "Landless households will have opportunities to sell labour."

A generalized impact on social assets at the community level was also acknowledged in the comment that "Villagers participate in village meetings more readily" and the observation pertaining to the "Increased working capacity of the commune and village cadres". Comments relating to the wider national community included: "Conducted study tour to learn experiences from other localities," indicating an expanded network of relationships beyond the local community; and from an ethnic minority village, "Local people are happy and believe in the NTFPs project because we implemented activities based on what we were told" (this is about credibility and trust).

Not all of the comments about social assets were so positive, however. Some participants from Group 2, "Poor and Forest Dependent Households," and even some from Group 1, "High Access Households" in villages with an extremely inequitable land distribution called attention to social disparities in benefits from the project: "No equity between households who have forest land and households who have no forest land" and "The project does not support all households, resulting in conflict between supported and non-supported households. Many households don't know about the project". The land disparity obviously was not caused by the project, but the livelihood opportunities presented by the project certainly increased the awareness and significance of unequal distribution.

One participant suggested a solution to the problem of favouritism in the distribution of project opportunities: "Many households don't know about the project. It is proposed that villagers should be informed through the loudspeaker system".

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Community Initiatives on NTFPs Enterprises for Poverty Alleviation and Biodiversity Conservation: Multi-stakeholder Perspectives on an Effective and Enabling Environment

Dr. Nitaya Kijtewachakul[1]

ABSTRACT

In the last few decades, community organisations have been strengthened – and, in some cases, have gained notoriety – for initiatives on NTFPs enterprises which result in poverty alleviation and biodiversity conservation. These community networks include the Eastern Forest People's Network and the Inpeang Community Learning Network.

These few cases have shown the capacity of local people to domesticate forest resources on their farms within agro-diversified systems. As a collaborative effort between many community organisations coming together as a grassroots network, these groups have created value-added processing and NTFPs enterprises based on forest resources located near their communities, which have resulted in livelihood improvements and in turn led to sustainable community development. It is also interesting that these community networks, in collaboration with various educational institutes and partners, can attract customers, which in turn creates new markets in the locality. In some cases, they are also able to improve NTFPs product quality in order to meet national and international market standards and attain certification.

The concepts and tangible practices of these few cases have been discussed among many community forest network representatives, as well as staff from government and non-government organisations, who have worked with community forestry networks to learn their views and perspectives and identify opportunities and risks.

This paper will also present their views and concerns regarding linking poverty alleviation and biodiversity through the development of NTFPs enterprises. In addition, it will ask whether it is possible to facilitate the growth of NTFPs enterprises for poverty alleviation under the existing forestry policies and laws.

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The Importance, Role and Value of Non-Wood Forest Products for Laotian Food Security, Nutrition and Livelihoods

Vongvilay Vongkhamsao

INTRODUCTION

In the symposium on biodiversity for food security organised in October 2004 by the Food and Agriculture Organisation of the United Nations (FAO) and the Lao PDR Ministry of Agriculture and Forestry (MAF), it was agreed that a wide variety of forest products made up a large proportion of the daily diet of rural Lao families. Over 450 of these edible Non-Wood Forest Products (NWFPs) have been recorded so far including edible shoots and other vegetables, fruits, tubers, mushrooms, small water animals, wildlife etc. The diversity of the NWFPs consumed reflects the rich agricultural biodiversity of the rural landscape in Lao PDR.

The Lao definition of food security is "to ensure enough food and foodstuffs for every person at all times, both in material and economic aspects, with increasing levels of nutritional quality, hygiene and balance so as to improve health and enable normal development and efficient employment" (NAPP).

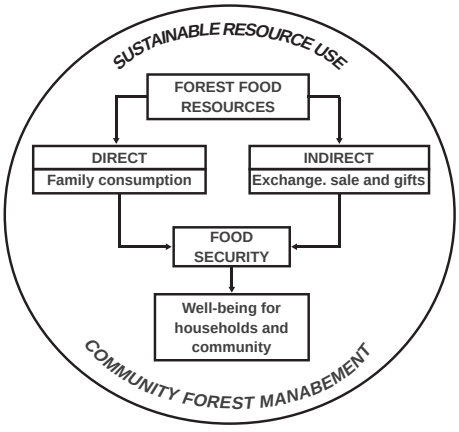


Figure 1: Forest foods and food security link forest resource management to well being (source: Clindon 2001)

This paper presents a conceptual framework for forest foods and food security linked to forest resource management, based on NWFP research projects conducted in Lao PDR and the preliminary results of the Agriculture Biodiversity Programme's project entitled "Enhancing food security through sustainable management plans for NWFPs".

CONCEPTUAL FRAMEWORK FOR FOREST FOODS AND FOOD SECURITY

The direct contribution of NWFPs to food security in valuation studies is roughly 50 per cent compared to rice, which is the country's staple food. Together, these foods make up around 80 per cent of the total value of family's subsistence expenditure. NWFPs also contribute indirectly to food security, as they can be sold to buy rice in times of shortages. NWFPs are estimated to contribute 40-50 per cent of the cash income of rural Lao households, while 50 per cent of an average household's cash income is used to buy rice (more for poorer families). NWFPs are therefore the most important safety net or coping strategy for the rural poor in Lao PDR.

The availability of this safety net is declining quickly following rapid deforestation for timber logging and conversion of forests to agricultural areas. The challenge is to adopt land use systems to keep enough forests in the landscape while allowing the poor access to forest resources. Another option is to domesticate wild species in agro-forestry systems and gardens. Lao forest foods also have potential to be exported as gourmet products to niche export markets.

Gathering of NWFPs is an important element in the livelihoods of most rural Lao families, especially for those living in upland areas. NWFPs contribute in two ways to food security (see also Figure 1):

- Direct consumption of forest foods accompanied by rice; and
- The sale of NWFPs to buy rice in times of shortages.

NWFP ACTIVITIES AND PROJECTS IN LAO PDR

Studies on the importance, role and value of NWFPs in Laos

The largest range of NTFPs species is found among edible plant products, edible animal products and ornamental plants (mainly orchids). These resources and others contribute significantly to the national economy due to their important role in the household economy and in rural food security, which is one of the government's main policy objectives for the agriculture and forestry sectors (Clairon, 1998).

Table 1. Villagers' ranking of 50 most important NWFPs

Ranking	Product	Ranking, %		
		Men	Women	Total
1	Bamboo shoots	13	17	13
2	Fish	13	7	10
3	Vegetables	11	11	9
4	Wildlife	11	6	8
5	Cardamom	7	7	7
6	Rattan canes	6	6	6
7	Damar resin	2	4	5
8	Frogs	5	5	5
9	Mushrooms	3	6	4
10	Yang oil	4	4	4
Total top 10 products		75	73	71
Other 40 products		25	27	29
Total 50 products		100	100	100

Source: The Use of NWFPs in Lao PDR, DoF/IUCN Vientiane, Foppes J., Ketphanh S., November 1997.

The IUCN/NTFPs Project has assessed the importance of NWFPs for the household economy in 28 villages of three provinces (see Table 1.).

When ranked against other NWFPs, bamboo shoots stand out as the single most important product. Women usually attach more importance to products such as vegetables and bamboo shoots, while men prefer products such as wildlife and fish. Most other products seem to be collected by both men and women.

Household use of NWFPs

NWFPs play a central role in the rural economy of the Lao PDR, and have been studied extensively (Clendon 2001, de Beer 1991, de Vletter 1997,

Enfield et al 1998, Foppes and Ketpanh 1997, 2000a, 2000b, Foppes et al 1997, IUCN 2002a, Lamxay 2001, Raintree and Soydara undated). It is known that wild plant and animal species provide a wide range of products for consumption and production, including: animal proteins from foods such as wild meat, fish, frogs, shrimp, soft-shelled turtles, crabs and molluscs; plant foods such as mushrooms, bamboo shoots, wild fruits and vegetables, and honey; materials for constructing house and handicraft production from bamboo, rattan, pandanus, broom grass and paper mulberry; traditional medicines; and livestock fodder and pasturing materials.

NWFPs are known to be a particularly important component of household subsistence, especially in terms of food consumption. Villagers rank wild foods consistently as the most important forest resource (Clendon 2001), and it is thought that wild meat and fish are the most important source of protein in most people's diet (Foppes and Ketphanh 1997). It is estimated that wild foods contribute between 61-79 per cent of non-rice food consumption by weight, and provide an average of 4 per cent of energy intake, 40 per cent of calcium, 25 per cent of iron and 40 per cent of vitamins A and C (Clendon 2001). They are also commonly used as buffers against seasonal and emergency food shortages (de Beer 1991).

National studies have found that sales of NWFPs are worth an average of 11 per cent of total cash income, rising to 55 per cent in forest-rich areas (NSC 1999). In many parts of the country, cash income derived from NTFPs is far greater than the national average. For example, surveys carried out in Houapanh Province found that NWFPs contributed an average of 38 per cent of village cash income, rising to as high as 56 per cent for households living within and adjacent to forests (IUCN 2002a). On the Nakai Plateau, NWFPs account for over three-quarters of family income (Foppes et al 1997).

Although it is difficult to aggregate this kind of data at the national level due to large variations in social and cultural systems, livelihoods, forest dependency, and access to other sources of production and consumption, estimates have been generalised for the whole country. On average, NWFPs are worth a total of almost $320 per year for rural households in the Lao PDR, contributing about 55 per cent of cash income, or 46 per cent of the total household economy (Foppes and Ketphanh 2000a).

These figures suggests that NWFPs may be worth some Kip 2.6 million per household per year, or Kip 1,837 billion in total (see Table 2). Firewood, fish and aquatic resource consumption values are excluded from this figure.

Table 2: Annual value of NWFPs for household income and subsistence

	$ per household	Kip per household	Kip billion total
Household subsistence	223	2,209,680	1,582.66
Household income	36	354,470	253.89
TOTAL	**259**	**2,564,150**	**1,836.55**

Trade in NWFPs

NWFPs also have a high industrial and trade value. The most important components of the commercial NWFP harvest are mainly plant exudates (resin, oleo-resin, *Siam benzoin*), medicinal plants, spices and condiments, plant barks (paper mulberry or "po sa" - *Broussonetia papyrifera*, *Persea kurzii* and *Boehmeria malabarica*), fruits (Malva nuts/ *Sterculia lychnophora*), sugar palm (*Arenga pinnata*, *Dialium indum*), and stems (bamboo, rattan, broom grass) (Lamxay 2001, SoE 2000).

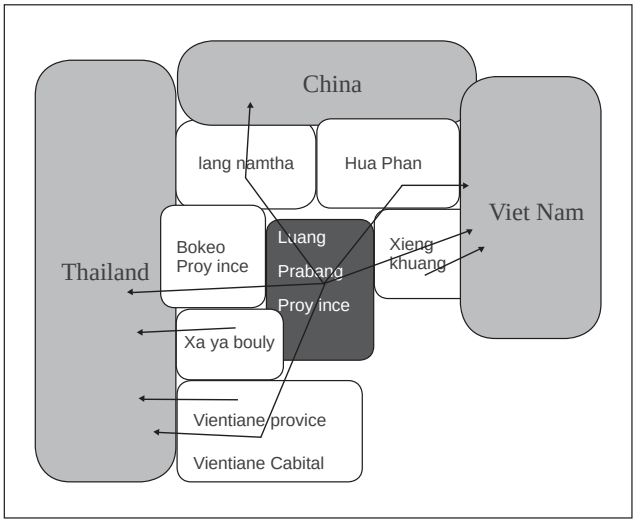
NWFPs trade is mainly conducted through middlemen, who travel to different villages to buy the products from villagers. In some cases, the sale of products goes through a long chain of middlemen before reaching export companies.

Most NWFPs from the Lao PDR are exported to China, Viet Nam and Thailand, although certain products are also exported to Japan and Europe. China has been the biggest importer of medicinal products from the Lao PDR (Ingles et al., 1998).

Much of the commercial harvest of NWFPs is exported to neighboring countries, where it is often processed and sometimes re-exported to other parts of the world. The reported export value of NWFPs was about $6.3 million in 1993, representing 3 per cent of the country's total export value (Sengdara. & Ketphanh 1996, cited by Ingles et al., 1998). This dropped to 2 per cent in 1996.

Between 1994 and 1998, recorded exports of NWFPs were worth almost $160 million, or an average of $31.8 million a year[1] (World Bank, Sida, and Government of Finland 2001b). Annual export values however varied greatly over this period (between $1.1 million and $73.2 million), and have now declined substantially from a high of over $70 million a year in the mid-1990s.

Estimates of the quantities, values and current prices of major NWFP exports would suggest that today official NWFP exports are worth between $6-7 million a year (Lamxay 2001, World Bank, Sida, and Government of Finland 2001a), or an average of Kip 64 billion.



Among all the exported products, medicinal plants score highest at about 70 per cent of the total export value, followed by fibre products (15 per cent), resin (8 per cent), edible products (6 per cent), and incense (2 per cent). However, the total actual export value is suspected to be higher than the figure presented in the table, as data for some products such as orchid stems, berberin vine, and Smilax glabra are still missing.

NWFPs market surveys

The results of provincial surveys on NWFPs trading in three pilot provinces of the NWFPs Marketing System Development Project (TCP/LAO/3002) are shown below.

- Luang-Prabang province is rich in NWFPs, and trading is important within the province but also with Thailand, China and Viet Nam. The potential NWFP products listed for increased production and marketing are: mulberry, keam, pearkmek, peaek kea, bitter bamboo shot, sugar palm, chandai, orchid, pearkhat, marpee, bamboo (shoots and canes), cardamom, orchids, aquatic and wild vegetables, fruits, insect larva, fish, berberin, mushrooms, ngaka, medicine plants, marko and Kikang.
- Savannakhet province is located in a strategic position between Thailand and Viet Nam. The NWFP products currently traded and identified by the survey are: rattan (six species), mushroom (eight species), bamboo shoots (six species), sang, orchid, cardamom, wild fruits, wild vegetables, damar resin, honey, persia (Bong), insects, fish, frogs and birds.
- Champasak province is also rich in NWFP resources and NWFP trading is an important source of income for the province. The main products identified during the survey are: rattan (Wai Ta Leuak, Wai Sa Vang, Wai Deng/ Kam Lao, Wai Hangnou), malva nut, bamboo (shoots and canes from four species), damar resin, berberin vine (Haem), cardamom, oleoresin, kha douk, frogs, fish, and birds, wild fruits, mushroom (three species), aromatic

1 In addition, a large proportion of commercial extraction and trade takes place unofficially. It is however impossible to obtain reliable data on the scale or value of this utilisation

snails and wild vegetables. NTFPs trade from Champasak is mainly done with Thailand and Viet Nam but also with the Lao capital Vientiane. Handicraft (bamboo and rattan) production is becoming an important activity in the province and increasing numbers of villages have started to develop rattan and bamboo handicrafts.

The companies interviewed in the three provinces mentioned that there is no capacity (skills and equipment) in value-adding techniques and processing, product quality management, and marketing. Some companies mentioned that they need capacity building training either through the government or through a project on processing and other value addition techniques, product development and marketing. Two important issues raised by most of the trading companies, but also by provincial and district officers, were: the poor quality of raw materials; and fluctuating prices. Moreover, the Lao taxation system is complex with many levels of taxation, which are not often clear for the private sector.

NWFPs nutrition study

Forest foods have higher nutritional value than domestic animals or garden foods (FAO, 1996). A chemical analysis of some traditional Katu foods corroborates this (Krahn 2005). Many wild plants and animals provide food with greater nutrient densities than alternative foods imported through market networks in remote mountain areas. In some areas of Laos moreover, market food supplies are highly restricted and there are many days when even bananas are not available. Table 4 presents the key nutritients of NWFPs.

Table 4. Key NWFP nutrients[1]

Food Groups	Examples	Key Nutrients
Leaves, stems and sprouts	Leaves, ferns, bamboo, rattan, etc.	Carbohydrates, beta-carotene, iron, zinc, calcium
Mushrooms	Polyporaceae and Russulaceae species, etc.	Calcium, iron, protein
Fresh water snails, crabs, shrimp	Thiara aspernata	protein, fat, calcium, iron, Vit E
Insects	Termites, dung and long horn beetles	proteins, fat, iron, calcium

Marketing system development for non-wood forest products project

NWFPs play an important role for Lao people, particularly those in rural areas who depend on natural resources for their livelihood. This is particularly the case during shortages of agricultural foods, as people can collect NWFPs for consumption and for sale to buy rice. Lao forest resources are also in better condition currently compared to the neighbouring countries such as Thailand and Viet Nam.

FAO, in partnership with SNV, assisted the Forest Research Centre (FRC) from the National Agriculture and Forestry Institute (NAFRI) in the implementation of a project entitled Marketing System Development for NWFPs. The project began in September 2004 and was completed in September 2006 after implementing activities in three provinces, including Luang Prabang, Savannakhet and Champasack.

The project's objective was to establish a model for developing marketing systems for priority NWFPs through the Market Analysis & Development (MA&D) approach, which enables local communities to identify potential products and develop markets that will promote income

1 Extracted from Important Key Nutrients of Traditional Upland Non-rice Foods

generation through strengthening the capacity of stakeholders for NWFP marketing and sustainable management of NWFP resources. Developing and strengthening environmentally and socio-economically sound market development with enhanced marketing systems provides income as well as incentives to local communities to manage NWFP resources in a (more) sustainable way. Consequently, it contributes to reducing pressure on existing natural forest resources.

The six project villages were located in the poorest part of the country, where average annual household income varied from $200 to $800. The project helped villagers gain more benefits from the sale of NWFPs while practising sustainable harvesting and production. Overall, the MA&D approach resulted in the establishment of 10 community-level enterprises (involving 239 people), creating employment and income for local residents. Out of the 10 pilot enterprises, two enterprises worked on paper mulberry production, three enterprises produced mushrooms, three enterprises produced bamboo handicrafts and two enterprises focussed on rattan handicrafts.

The benefits that villagers earned from the pilot enterprises varied from village to village and ranged from $5 to $70 per household (depending on the product, and covering only the six-month pilot period). This additional income was invested in the enterprise and also used for buying food and paying school fees and medical expenses. In addition, village development funds were set up to fill the gap in financial services and help villagers implement the pilot enterprises.

During the implementation of the project, the capacity of national, provincial and district staff was strengthened in marketing and management, collaboration and networking. They will form the core team to assist and support the villagers to sustainably manage the rich sources of NWFPs in the project areas.

Activity funded through the FAO-Netherlands Partnership Programme (FNPP)

NWFPs and other terrestrial biodiversity are one of the five main components of the National Agricultural Biodiversity Programme (NABP), which aims to support national priorities for food security and development. The project team prepared a project proposal to continue the development of a marketing system for the NWFP project in Phin district, Savannakhet province, and implement it in five villages, including one site of the previous project. The activity will focus on enhancing food security through developing a sustainable management plan for NWFPs.

The development objective of the project is to assist the Government of the Lao PDR in reducing rural poverty and promoting the sustainable use and management of forest resources through the development of an appropriate NWFP management plan associated with a sound marketing system. More specifically, it is important to understand the strong links that exist between food security, forest foods and resource conservation and to incorporate this understanding into sustainable village forest management strategies.

The specific objectives of the project are to:

- demonstrate to policy-makers the importance of existing NWFP biodiversity and its importance for food security, as well as poverty alleviation, and the need to integrate NWFPs into forest management plans to ensure long-term access to food for rural communities;
- demonstrate to local communities the importance of NWFP biodiversity in regards to the socio-economic development of the village (food, culture, medicine, incomes); and
- demonstrate the usefulness to policy-makers and provincial and district staff of the MA&D approach tested by the Marketing System Development for NWFPs in supporting local communities to

manage NWFP resources for food and income generation in a sustainable manner.

The expected outputs of the project are:

- a model approach to integrating NWFP resource management into forest management plans and village development plans to ensure food security and the sustainable socio-economic development of villages; and
- to increase awareness among policy-makers (district, province and national level) of the importance of existing NWFP biodiversity and help them realise the need to integrate NWFPs into forest management plans to ensure long-term access to food for rural communities. Through conducting field activities and together with the Forestry Strategy 2020 and National Biodiversity Agriculture Programme, such increased awareness is expected to encourage policy-makers to support and replicate the above-mentioned model approach.

The main tools that will be used in this project are the MA&D approach, Participatory Rapid Appraisals (PRA), interviews and NWFP forest surveys, and planning field activities with all project stakeholders.

The project will operate around Dong Kapok forest area (Evergreen/Dipterocarp forest) and will involve five villages, including Ban Alouay Kham Noy, which was a pilot village in the above-mentioned project. The total period of project is 14 months from October 2006 to November 2007.

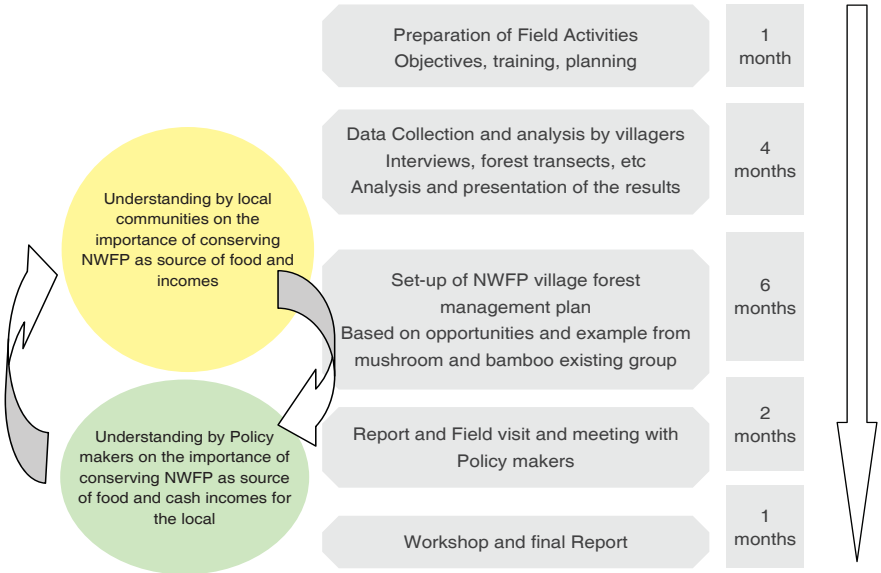
By the middle of 2007, the project had conducted PRA and MA&D training and will soon finalise the sustainable NWFP management plan, as well as nutrition study regarding forest food and NWFPs. Through implementing this activity, the project expects to demonstrate to policy-makers the importance of NWFPs for food security and, through field visits and documentation, show how villagers can manage their NWFP resources sustainably. The conceptual framework is presented below.

Activities will take place around Dong Kapok forest areas in Pine district, Savannakhet province. Around 60 households in five villages, estimated at approximately 360 people, will benefit from this project.

Through integrating NWFP resource management into forest management plans and village development plans, the project aims to contribute to food security, adequate nutrition and the sustainable socio-economic development of the villages.

Activities completed

The following activities have already been conducted.



- an assessment was conducted by the villagers regarding the NWFP resources available in the surrounding forest, including seasonal calendar, forest transect, forest food resource matrices for dry and rainy seasons, participatory resource mapping, livelihood system diagram, etc. An NWFP inventory methodology will be developed in the future, depending on the NWFP products identified.
- a presentation was compiled comprising the survey results and identification by the villagers through listing, group meetings etc. of the main NWFPs and their importance to food security and nutrition, as well as their roles in the livelihoods of the villagers (source of cash income to buy food etc.). The project team also evaluated the potential and constraints of the products, and prioritised them based on local conditions, such as ecological systems, socio-economic situation, traditional knowledge and culture, land use, NWFP resources and also marketing opportunities (using the Product Assessment Table and others tools from MA&D).
- awareness session was conducted for the village target group on the presence of NWFP biodiversity in the forest, their use in the home garden and their importance to food security, nutrition and cash incomes at the village level.
- villagers have been assisted in identifying activities based on the constraints and opportunities identified for the selected NWFPs according to: (i) food security; (ii) natural resources; (iii) marketing; (iv) social and policy; and (v) technology.

Future activities

Within the next phase of the project, villagers and DAFEO will develop, together with the project team, NWFP sustainable forest management plan for villages, including community-based NWFP harvesting rules and multi-village NWFP conservation rules for selected NWFPs, which will be linked with the forest management plan and village development plan. Working group meetings between the representative groups of each selected village will be organised, as well as village cluster management groups, who will be responsible for the implementation of the NWFP sustainable forest management plan.

The project team will conduct training on domestication and/or replanting (enrichment) in natural forests, depending which NWFP species are selected by villagers, and a nutrition study regarding forest food and food security in project villages. The study will be done in collaboration with the Ministry of Health.

Main findings of the survey

- more than 50 per cent of poor groups in the five villages rely on NWFPs for their livelihoods
- 21 main species of NWFPs are used for food, sale, household consumption and border trade
- 10 species are used for selling and generating income for households (damar resin, mushrooms, orchids, ant eggs, frogs, rattan, roots of kham pair-climber, fish, wild vegetables and aroma snails).
- Laos is currently experiencing a boom of rubber plantations by private companies from neighbouring countries. The forest around one of the project villages was totally cut down in April 2007 for a rubber plantation. While destroying the forest that people depend on, the uncontrolled spreading of plantations poses a severe threat to the food security and livelihoods of rural people. The project has to change its original workplan of supporting community-based rattan management. Instead, the project has to plan for a baseline survey to be able to evaluate the impact of the plantations on agro-biodiversity (in particular NWFP resources), impact on the health of the villagers (their livelihoods and food security), and other cultural and socio-economical impacts.

In order to demonstrate to policy-makers, as well as people living in the rural areas of Lao PDR, the importance of NWFPs, the project will produce information material and conduct workshops and field trips regarding the model approach (MA&D framework). The project will also present the NWFP village sustainable forest management plan to policy-makers, and policy recommendations in order to expand the approach. Field visits and meeting between villagers and policy-makers will be organised to present the results and lessons learnt from the field activities.

CONCLUSION

To enable NWFPs to be addressed in national policies as a component of agricultural biodiversity, it is important that all NWFP activities, particularly forest management, be linked to all national development programmes such as the National Forestry Strategy 2020, National Growth and Poverty Eradication Strategy, National Socio-economic Plan 2006-2010 etc.

It is important to build capacity and extension programmes at all levels to raise awareness and encourage action by promoting and expanding successful cases of NWFPs e.g. the MA&D method tested in the two projects mentioned above.

It is also important to obtain support from governments, donors, development organisations and non-government organizations for NWFP research and NWFP projects to ensure continuing support for this important sector.

In general, NWFPs play an important role for national economics and the livelihoods of rural people. Particularly during the periods of rice shortages, NWFPs are an essential source of food and income for people living in rural areas. However, NWFP trading in Laos is concentrated mostly on raw materials and there is no capacity (skills and/or equipment) in value-adding techniques and processing, product quality management and marketing.

The taxation system is extremely complex with multi-level taxes, which are often not clear for the private sector. There is a need to formulate a project to study this issue by testing key commercial NWFP species in different phases.

The major constraint on NWFP utilisation and development is lack of knowledge. There are critical gaps concerning propagation, silviculture, enrichment, harvesting and sustainable management of wild populations of NWFPs, as well as information regarding their domestication. There is also a need to identify NWFPs species with importance for food security, commerce and biodiversity conservation, and to determine which of these are currently threatened so that appropriate interventions may be taken. Knowledge for developing in-situ conservation efforts is also needed.

The extent and nature of the domestic utilisation, trade and markets for NWFPs is unknown. Similarly, the market forces driving unsustainable, as opposed to sustainable, use of NWFPs are poorly known and there is little information on prices, quality standards and international market access requirements. This limited capacity to observe, identify, measure and control NWFP trade has a negative effect on the sustainable use of NWFPs by providing conditions under which trade in prohibited products has flourished.

Currently, there are few government officials responsible for NWFP development, and these are split among a number of agencies with limited capacity, in terms of both human resources and equipment, to undertake the tasks required. Therefore, the implementation of policies regulating the marketing and development of NWFPs resources will require substantial capacity building both within government and with respect to other stakeholders, including villagers, traders and processors.

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Understanding and Supporting NTFPs Market Requirements: Managing Risk, Creating Success

Aaron Becker & Mark Barnett

BACKGROUND

In March 2007, a letter of invitation was sent out to the broader NGO/Non-Timber Tree and Forest Products (NTFPs) community, asking that any group with products that wanted or needed help establishing overseas (US and Japan) markets, please describe: a) the product they have; b) the quantities and cost of the products (small quantities were acceptable); and c) if there was any special story attached to the product[1].

Only two replies were received, with both groups still in the very early stages of processing. Given that many donors supported NTFPs projects in the region over the last two decades, one might ask, "Why weren't increasing numbers of substantive replies received?". Certainly, there are a number of reasons for this. For one, perhaps these groups already had well-established markets? Perhaps they had buyers asking for more than they could currently supply, or had no access to email, or were in the early stages of product development and more focused on cultivating a niche market, keeping it small, and would consider expanding later into external market considerations? While uncertain of the causes for the lack of responses, this paper's authors suspect it points to the fact that, while many of these projects proclaim goals of "boosting farmers incomes," they were unprepared to present basic product information, had yet to target specific markets, and were likely failing to adequately consider or address even the most basic of market requirements.

Indeed, to create new niche markets for little-known products can be a big challenge, and it is often beyond the scope of most NGOs. Market considerations (i.e., with substantial research, business plans and real support connections) need to be placed at the beginning of projects and new enterprises. Certainly, target markets should be well considered, understood and/or developed before thousands of poor farmers are convinced on limited or negligible information to replace staple or home food crops.

Thus, if your project's aim is income generation (which can be related to, but is different from the pure conservation of species), you must strive to understand and make market connections at the beginning, so that you can know clearly what your aim is, and what possibilities and obstacles you'll face in meeting market quality requirements. Furthermore, it is clear most NGO/NTFPs projects need support and skills for building functioning, profitable community businesses. There are numerous avenues to this, but all require diligent research, some risks and trial and error. This risk can be mitigated in part by attending niche-product trade shows, finding and hiring entrepreneurial staff with business experience, giving staff room to explore, innovate and gain entrepreneurial experience, or even developing links with for-profit organisations that already understand business and markets. Whether acting from some corporate responsibility to communities, or if only out of their own self-interest, for-profits can provide functional linkages, technical training and perhaps even financial assistance. For example, handicraft co-operative development through Ba Nhat, Mekong provided a means of training and "stepping-into" higher value niche markets.

1 Becker, Aaron email to enviro-vlc List (from the Australian-Viet Nam Science-Technology Link). Subject: "Looking for sustainably-produced niche products ready for export." 23/3/07.

SCOPING STUDY OF POTENTIAL PRODUCTS & PARTNERSHIPS IN LAOS, VIET NAM AND CAMBODIA

Aaron Becker was asked in 2005 by Viet Nam's largest spice exporter of cassia, pepper and other spices, Pacific Basin Partnership (PBP)/Son Ha Spice Co., to review and summarise existing raw materials for spices, oleo resins, food safe products and related opportunities suitable for potential PBP investment and/or expansion in Laos and Cambodia. With Mr. Mark Barnett's permission (PBP's Managing Director), they have allowed the basic background of this study to be presentation in this paper.

Investment opportunities in that 2005 study were viewed primarily in terms of potential for production and processing of spices/agricultural products for export from these countries. 'End of spectrum food-safe products' were studied for products PBP was already dealing with, and for which markets/ clients already exist. Further scoping work was undertaken to:

- analyse the diversification of supply to circumvent potential risks and issues for Viet Nam through its current products;
- explore the development of new products, with new soil/weather/climate conditions available in Laos/Cambodia; and
- explore attractive opportunities, including ethical issues such as making donor-money "real", providing technology to support opium eradication, supporting local communities, proper management of resources, etc.

The major source of livelihoods in Viet Nam, Cambodia and Laos is, in simplest terms, agriculture. It employs a good majority of the work force and provides about half of the three countries GDPs (figures vary around Viet Nam 20 per cent, Laos 57 per cent, and Cambodia 37 per cent). It should make sense then that agriculture and related opportunities are, for a variety of reasons, a major focus of the Laos, Viet Nam and Cambodian governments and subsequently, of most donor-aided development programmes.

Furthermore, many decision makers in these countries realise that "donor aid" will not (and need not) last forever, and that current aid can and should be better linked to private enterprise. Similarly, as Viet Nam, Laos and Cambodia are eager for access to external markets and commercially viable products and have development programmes which do and might further support NTFPs development and expansion, it is realised that there are potential opportunities for private companies to make money while doing "good", thereby making donor money more sustainable and "real".

And yet, while many of the groups and individuals interviewed at that time talked about their eagerness to enter into the for-profit realm and markets, there was very little pro-active movement, commitment and real support for developing such business sectors. While most NGOs stuck to their own agendas, government funds were focused on drug eradication without concrete replacement crop ideas, and infrastructure and education at the farm level were quite low.

Little in the way of accurate national statistics was available on either the production or trade of many NTFPs species, and inference was often drawn through observation, talks about "common sense" with individuals/companies dealing in "related products", and their exposure to what were largely informal market systems[2]. Often, the most basic information on products, seasonal availability, production, economies, and demand/ consumption were not present. More support for substantive research in this regard would be useful for prioritised NTFPs, as would support for NTFPs market development.

Notably, important information is not available in many regards for spices and nutraceuticals, yet we're told that "there is a huge demand" for certain products. Certainly this appeared true for certain crops such as corn and soybeans, and for NTFPs and other medicinal plants in China and Thailand. But we should be cautious in accepting

2 For certain products, written statistics and documents are available.

"common sense" - is this demand coming from a single company with vague plans to set up a processing facility in the province? Does it warrant local extensionists advising farmers to replace and plant crops of amomum, coffee or cashews to the point of oversupply? Does this single company simply wish to offset potential political risks in a country on the other side of the world, or do they really intend to develop the local community? Again, specifics are needed and must be sought.

Broadly speaking, "good or bad" agriculture and NTFPs production are practiced at a very low level in the region i.e., it is generally not highly mechanised, there is not a particularly strong plantation or garden culture, and typically it occurs on home plots of half-to-two hectares. Thus, the production quantities of most NTFPs in these countries tend to be relatively small, with the majority of the production often produced for local/regional markets and local consumption. Despite this, certain NTFPs are being developed and hold larger and wider market potential. As agriculture is the main source of income for villages, and people have practiced it for centuries, certainly this sector has the potential to become a bigger source of revenue, as well as a greater contributor towards well-planned buffer zone development and the conservation of species. Considering population and economic growth alone, one would expect demand for NTFPs products, by both legal and illegal means, to continue to grow.

Entrepreneurs in Indochina have begun to tap this potential with start-up projects. Furthermore, new farm contract-mechanisms have been piloted and are working for a number of projects and companies (eWikul soybeans, peer-group contracts of GTZ in Cambodia, etc.). This advance is important, as for many for-profits, they are hesitant to work with NGO and community-based projects. From their experience, farmers and communities often do not honour binding contracts. Market forces are quoted as being the reasons for lack of commitment. In all fairness, EU and US companies also "talk" about ideas such as community support and fair trade, but also often do not commit to such initiatives unless someone is watching. Therefore the following questions remain:

- How can real commitments be made between farmers and companies?
- What mechanisms can be developed to ensure meaningful contracts?
- How can real commitments be gained from trading markets for our goods?

WHAT'S AT RISK? VILLAGE-LEVEL NTFPS PRODUCTION CAPACITIES

Farmers want stable incomes. A stable income is critical to most of us, and particularly so to the well-being of poor farmers and to maintaining their active interest in NTFPs and conservation initiatives. Farmers worldwide basically want two things: a) to be able to produce enough/earn enough to satisfy their own subsistence needs; and b) producing a surplus to sell at the highest price and at the lowest cost to themselves. Surmounting this challenge starts with a frank acknowledgement of the difficulties related to establishing NTFPs product niches and markets[3]. And yet, there are individuals and companies that are willing to help - and it is in their own long-term interest to do so. If real trust is built, and if done thoughtfully, real win-win situations can and are being created.

Within Indochina, while demand for certain species and products (such as handicrafts, select rattans, bamboos, medicinals and melaleluca) are relatively strong, there are numerous limitations to these and other smaller/niche products. While diversification of agricultural and NTFPs species is important for managing risk (i.e. so that "all the eggs are not placed in one basket"), as well as for local food security, because NTFPs are often propagated as supplementary crops or harvested (often illegally) in the wild, important "economies

3 Becker, Aaron & Goldman, Emily. 2000. The Challenge of Risk Management within Analog Forestry Interventions. Sustainable Development International, Fourth Edition. P. 73. London: ICG Publishing, Ltd.

of scale" available to monoculture species may be lost. Unless your product is extremely special, co-operative mechanisms capable of amassing a particular product across numerous sites may be considered as one means for regaining benefits in this regard.

Limitations to NTFPs products in this region may generally summed up in the following manner:

- The "wild cards" presented by the weather, unknown markets, land-tenure and socio-political factors.
- Small-scale farm operations: farmers with limited access to land, irrigation systems, suitable crop varieties and new technologies.
- Low yields, high production costs, and the "seasonality" of certain NTFPs supplies, as well as a lack of knowledge related to the propagation of best-suited species.
- Limited market knowledge, access and leverage: prices of products can fluctuate greatly and there is a real need to know and establish prices for products through legitimate channels that support communities and conservation.
- Poor natural resource management practices leading to declines in productivity, degradation of resources, and loss of species.
- Poor infrastructure, leading to difficulties in transporting products from remote areas. This factor may also discourage certain companies, trainers and buyers from wanting to do business with certain products or communities (i.e. costs outweigh benefits).
- The majority of people focus on rice and vegetable production and are not familiar with NTFPs propagation.
- Farmers breaking contracts.

REDUCING RISKS TO FARMERS AND BUILDING REAL COMMITMENT

The commitment and willingness of farmers to adopt a particular NTFPs regimen or resource management protocol will depend on the perceived risks involved and their confidence in being able to overcome them. It should be the role of implementers to help them manage and minimize such risks. Such factors as environment disasters and political upheavals affecting global prices are difficult to contend with, but there are a few ways implementers are successfully minimizing risks:

- A platform and process of mutual learning should be established between the farmer and extension agent. This process requires project officers to "be honest and reliable with farmers, to be a partner and to build with farmers".[4] This dialogue, over time, will help to increase the farmer's confidence in project officers' capabilities and methodologies.
- In kind, it also requires that farmers maintain contracts with the extensionist or company. The best relationships are developed between people sharing trust, which means capable and competent partners who don't break contracts. The development of supporting or enforcing mechanisms to ensure contracts are not broken should be considered.
- One must understand carefully the unique set of circumstances, values and tolerance in the community, as these traits shape how each household will perceive and respond to risk. While maintaining focus, seek ongoing consultation and practice flexibility with farmers. Only continuous dialogue, with critical thinking and negotiation between farmers and implementers, is capable of producing critical thinking.
- It's important that farmers are kept adequately informed, and are able to participate in important decision-making processes. This rapport requires time to develop. Ownership may be further strengthened as farmers contribute their resources, time, labour, etc to the project.
- Focus on the use of resources that farmers already have. Interventions should be simple and meet a perceived need.
- Develop NTFPs nurseries. Propagate the species for both conservation and a controlled

4 Analog Forestry Network, 1997. Analog Forestry Manual. Knowlesville, New Brunswick: Falls Brooke Centre.

supply chain to ensure there is neither great disturbance nor destruction of ecosystems. For example, Viet Nam is one of the world's largest manufacturers of wood products, and yet imports up to 80 per cent of the timber it uses. Supply/ nursery development needs to be addressed to develop a closed circuit that can be built, developed and managed locally. Don't "export" the problem.

- Make sure food security concerns are well addressed. Farmers should not depend solely on tenuous foreign markets. Households can rely on and support themselves with the right information if they have access to it.
- Only after market footholds are achieved locally and on a pilot basis should larger venues of regional, national and international markets be targeted. This steady, though tempered, progression allows for issues such as understanding and meeting contracts to be dealt with while keeping farmers' expectations realistic. It also provides a manageable way by even larger goals can be aimed for.[5]
- Risk can be reduced using limited scale pilot models and farmer-to-farmer exchanges and trainings, whereby innovations and lessons learned can be attempted, evaluated and, if successful, incorporated more broadly into a programme.
- Consider addressing important issues not wholly related to NTFPs, such as access to safe water and improved health, so that perceived risk is dealt with holistically. This builds local "buy-in" and confidence in your abilities to take on more challenging or "less appealing" work (such as with conservation).
- Co-operative mechanisms can help to achieve greater level of economies of scale.
- Site-specific land/resource management plans: tailor the solution as closely as possible to the local situation and to farm-specific variables (does this household or group have access to irrigation facilities, what soil improvements are needed, is electricity required for processing? etc.). Whether it is a short- or long-term plan, the more individualized a farm plan is, the more the farmer will be able to move their land through successive stages with confidence, as they will be able to predict their labour and input costs more accurately.[6]
- Access to credit may be necessary for the farmer to undertake improvements. Investment is required for the for-profit marketing arm as well.
- Continuously and honestly monitor and evaluate the programme's progress and discuss any positive changes that occur.

REDUCING RISK TO FOR-PROFITS FOR SUCCESSFUL PARTNERSHIPS

Risks occurs not only for farmers, but all along the value-chain – from the farmers to the processors, factories and marketing and distribution companies that have work forces to support - all the way to the end consumer. If NTFPs projects are concerned with developing incomes, then several things need to happen. At the most basic level, the following requirements are needed:

- Contracts must be honoured. There is a need for legal structures to make investments with farmers and guarantee deliveries.
- Local People's Committees must make guarantees that can be relied upon.
- Buyers in destination countries need a genuine commitment to support rural development and equality. We see lack of sincerity, even at the peak of the coffee pyramid. Fair Trade is a certificate, not a commitment. For example, Southern Sudan is the origin of much of Germany's hibiscus. It arrives in the US labelled as Egyptian. Buying from countries with child labour violations and weak human rights records (such as hibiscus from Khartoum, or cocoa from the Ivory Coast) while asking Indochina to sell products at lower prices is ethically inconsistent.

5 Becker, Aaron & Goldman, Emily. The Challenge of Risk Management within Analog Forestry Interventions. P. 77.

6 As above. P. 76.

- Pragmatically: While businesses may not care about the poor living conditions of producers, they do care about products that arrive in a poor condition and un-sustainable supply lines.
- Planning, establishing, supporting and enforcing producer contracts are the beginning. A real commitment to supply chains with consistent deliveries and reliable qualities is a start to profitable operations for consumer industries.
- Using the Ethical Cachet of Third-party Certifications should add to consumer acceptance of products and confidence in companies. This is a message for the users of agricultural goods. While NGOs, governments and producers might assist in building awareness of a certificate's value, it is a message that needs to be built up from the consumer side (i.e., "No one in Tokyo or New York is going to fall at our feet just because we wear feathers in our hair.").
- For-profits want to know clearly what a product is, what reliable quantities can be guarantee, and if there a special story attached.
- For-profits also seek and require knowledge and access to new markets and clients.
- Are resources available on the ground and what investment is required? What resources and investment are available? At the most basic level, nobody gets something for nothing - there must be something to offer.

NTFPs/MAPs Management's Contribution to Livelihood Improvement of the Rural Poor and Lessons Learned from the Churia Programme: The Experience of CARE Nepal

Rajendra Khanal and Krishna B. Bhujei

INTRODUCTION

Rich plant diversity found in Nepal's forests and other vegetated lands harbors hundred of medicinal and aromatic plants (MAPs). There are more than 7000 vascular plant species where 2000 plants have medicinal properties, and 1463 species are used locally in Nepal (Shreastha and Shreastha, 1999). The rural people are largely dependent on forests for food and medicines. With the increasing contribution of non-timber forest products (NTFPs) to the Nepalese economy, particularly the contribution to the household economy of rural people, the value of NTFPs has become widely recognized (Bhattarai et al 2003; Edwards 1996). The economic viability of NTFPs can be achieved in both in situ and ex situ conditions, applying proper and cost effective harvesting and domestication techniques. However, sustainable NTFPs management largely depends on the way in which social issues are addressed. There is always the risk of rejection of a technology by local people if the function and requirements of NTFPs management processes conflict with social values, norms, behaviors and institutions (Poudyal, 2004).

The poverty reduction agenda within forest management becomes meaningless until and unless there are tangible mechanisms and means with which employment and income can reach the local people. The Ninth and Tenth plans for the Government of Nepal as well as the community forestry vision have pursued poverty reduction as a major objective (NPV, 1997; 2003: Acharya t al 1998). Forest resources in general and NTFPs in particular are considered as having immense potential for employment and income generation for the rural people (Edwards 1996, Kanel 1999).

The role of NTFPs in the livelihoods of the rural population has increased significantly in recent years. This is evident form the fact that 4,700,000 households are involved in the commercial collection of NTFPs and the participation of the poor within this is even higher (Olsen, 1998).

As a project focusing on natural resources under the CARE Nepal Churia portfolio programme, the NTFPs/MAPs are identified as the best forest-based economic intervention for poorer groups in the community and larger society. One of CARE's development objectives within the Churia areas is to improve the livelihood security of the poor and vulnerable people in the Churia/Siwalik and Bhabor foothills regions of Sarlahi and Mahotarri districts by improving watershed conditions and promoting greater equity. Another objective of the Churia programme is to achieve the sustainable management of natural/watershed resources by community groups and individuals in the project areas in a manner that leads to greater equity and better income for marginalized families. Based on the above objectives, the project has focused on sustainable management of NTFPs/MAPs, targeting the poor, vulnerable and socially excluded (PVSE) groups.

The Churia area is rich in biodiversity and also has a high potentiality of NTFPs, therefore the project has done studies to find out the status of NTFPs in the Churia districts. Based on this study, 138 species (both aromatic and medicinal) were found

within the project area. Traditionally, all domestic materials have been made of bamboos, rattans, and other NTFPs, which are widely available in the Churia area. Similarly, the local economy has increased through the selling of these products in the local bazaar. The sustainable use and management of resources is a crucial point to attend to. Increased demand for handicrafts also has attracted small-scale cottage cooperative and affiliated poorer groups. The scale-up scheme converting into enterprise all such cooperative groups has required support in developing their capacity as well as market networks. A study shows that 93% of people lack awareness and 41% of users had no idea about future planning with regards to NTFPs. (Chhote et al 2002). Therefore, market analysis and development training along with elimination and mapping of products based on continuous supply on a large scale and business planning activities, etc, will add to the value of such groups/cooperatives.

The project was initiated the cultivation of medicinal and aromatic plants (MAPs) with an aim of mainstreaming NTFPs (especially MAPs) within community forests (CF), leasehold forest (LHF), and private forest with the involvement of PVSE groups to improve lives and livelihood security. Similarly, the longer-term Churia Area Programme Strategy and Forestry Sector Plan, and the final evaluation of the Churia programme, have also recommended increasing the scope of NTFPs in the Churia area. Looking at the situation of poverty stricken people, including the landless, also benefits from CF and LHF. The LHF concept is specifically focusing on poorer and landless people within CF, giving patches of CF land for the maximum period of 45 years.

Specific Objectives

- Building the capacity of users
- To make users self dependent for production of seeds, seedlings, and marketing
- To develop as a part of income generating activities for CF, LHF, and private forest farmers, especially targeting the PVSE
- To develop and strengthen the network at district level for ensuring NTFPs marketing and rights
- Conducting market sub-sector analysis and value chain analysis

Target population

The programme is targeted to PVSE users of CF, LHF, and private forest. The users were identified through use of a tool to rank well-being. The interventions start from the list of the poorest of the group's members.

Major intervention

- Capacity building, training, and workshops
- Establishment of a demonstration plot for extension
- Support for nursery beds (technical and financial)
- Market analysis and sharing workshops among producers, traders, and other concerned stakeholders
- Strengthening the NTFPs network

Major stakeholders

CF, LHF groups, private forest farmers, NTFPs networks, district forest offices (DFOs), district development committees (DDCs).

Benefits sharing system

The users of CF, LHF, and private sector have adopted the following benefits system in NTFPs management:

- In Cuffs: 2-10% of benefits of total income are shared with CF communities and other over the 90% o benefits which go to users
- In LHF: 100% of benefits go to users
- in private sector/forest: 100% of benefits go to users

Major achievements

- 145 users gained knowledge and skills in NTFPs management through various kinds of trainings, workshop and general exposure
- 4 nursery beds have been established by communities and are producing seedlings

- A total of 114-hectare area has been cultivated and/or covered with NTFPs (especially MAPs) in CF, LHF, and private sector, where 314PVSE households are involved and are receiving benefits. Out of them, 35% are from ethnic castes and nine are from Dalits (so-called untouchables).
- Two district level NTFPs networks have been established and are functioning well, especially focusing on NTFPs cultivation (production, harvesting, processing, and storage), marketing promotion and ensuring rights of users.
- Two selling centres for NTFPs established in Sarlahi and Mahottari districts to ensure that the local market is doing well.
- NTFPs network of Sarlahi district has developed meaningful coordination with the local government (DDC) and DDC allocated $7500 for promoting the NTFPs, targeting the PVSE. As a result, three user groups formed in CF and planted 0.1 million Asparagus species. 45 households are involved, of which five households are form Dalit and the rest are women, ethnic and other castes.
- In collaboration with the National NTFPs marketing and promotion centre and district forest office, the project was able to organize two national level NTFPs market promotion and analysis workshops. The organizers where also able to garner the participation of producers (users), traders/entrepreneurs, and other government and non-government institutions including research institutes. The objective of the workshop was to share experiences of NTFPs technologies, local knowledge skills, practices and dissemination of learning and sub-sector analysis and value chains. The information mainly focused on production status, marketing aspects of products, demand (national, regional, and at a global level) and opportunities. The workshop was also able to publish its declaration. The major outcomes of the workshop included familiarization with prominent MAPs that could be cultivated, marketed, as well as declaring some commitments assuring products, markets, and rights of users.

Major issues/challenges

The following pertinent issues have arisen during the sustainable NTFPs management [project]. The issues are analyzed using ecological, economical and social frameworks, linking them with existing policies and practices.

Issues related to ecological integrity

- Poor knowledge and skills regarding identification, abundance and uses
- Inadequate technology appropriate for rural people
- Lack of indigenous knowledge system and its proper handover from one generation to another
- Biodiversity maintenance
- Effects of climate change

Economic issues

- Limited enterprises and lack of business development plans
- Lack of economic incentives
- Limited availability of market information
- Lack of quality assurance for individual products
- Unscientific royalty and inappropriate taxation

Issues related to socio-political acceptability

- Lack of civil society and private sector roles in policy formulation
- Weak coordination, communication and monitoring
- Bureaucratic hassles

Opportunities

The following opportunities are found in the project area for improving livelihoods through sustainable management of NTFPs.

- High potential in the region of project area to

develop sustainable NTFPs/maps in cf, lhf and private forest as a main source of income with the involvement of pvse groups

- More employment opportunities at the local level through establishment of local resources-based cottage industries and enterprises targeting pvse
- It is possible to ensure the local market through increasing local and outside uses, which ultimately encourage cultivation and enterprise development
- In the project area over 2000 hectares are public and degraded lands, (dfsp 2006), with the high potential to become areas for management of NTFPs/maps with the involvement of pvse through different forest management approaches
- Reduce the out-migration and secure livelihoods within rural communities
- Biodiversity maintenance and conservation

CONCLUSION

Developing tangible means and mechanisms reaching to the chronically poor through sustainable management of forest is a vital part for a significant reduction of poverty within the country. The Churia area is rich in terms of biodiversity and natural resources, including NTFPs/MAPs. A prudent use of such resources, which are abundantly available, is of prime concern within the community. Similarly, an appropriate technology suited to the local situation and considering the beneficiary groups (poor, vulnerable, socially excluded, landless and women) is required at all levels of the production cycle. The key issues and challenges also need to be addressed adequately. For this, supportive policies, appropriate technology, and an economically viable and environmentally sound package need to be developed. A market and/or sub-sector analysis and value chain analysis is also equally important to contribute to poverty reduction and improvement of the livelihoods of the most marginalized groups within society.

Finally, a comprehensive and coherent policy for the Churia and biodiversity conservation, and cultivation, management, and marketing of potential NTFPs/MAPs should be in place.

To obtain a copy of the full length version of this paper, please contact Rajendra Khanal at rajendrak@carenepal.org

THEME 2:

MAKING THE LINK - COMMUNICATION AND NETWORKING

Viet Nam's NTFPs Network: Looking Ahead

Nguyen Huy Phon[1] & Nguyen Thi Yen[2]

BACKGROUND OF NTFPS NETWORK IN VIET NAM

The Non-Timber Forest Products Project (NTFPs Project) funded by the Royal Netherlands Embassy (RNE) in Ha Noi with technical assistance from IUCN and implemented by the Forest Science Institute of Viet Nam (FSIV) under the Ministry of Rural Development (MARD) has the overall goal: *"To achieve forest conservation and biodiversity through capacity building for the management and sustainable use of NTFPs, both ecologically and economically, with benefits equitably distributed among all target groups, especially the poor living near and inside forest areas".*

The project has been implemented from 1998 to 2007 under two phases: Phase I (1998-2002) entitled *Sustainable Uses of NTFPs;* and Phase II (2002-2007) entitled *NTFPs Sub-sector Support in Viet Nam.*

The objective of Phase II is: *"To strengthen the capacity of research and management institutions in Viet Nam to support the ecologically sustainable and equitable use of Non-Timber Forest Products (NTFPs) to contributes to: biodiversity conservation; improved livelihoods for poor people residing in and around forest areas; and local and national economic development".*

At the beginning of the new millennium, more importance was attached to the role of NTFPs. Many activities related to NTFPs carried out by national organisations and international projects throughout the country have identified the urgent need for information-sharing and cooperation in the development of NTFPs. Therefore, in addition to the capacity building activities for NTFPs research agencies, the NTFPs Project Phase II also supported the establishment of a nationwide NTFPs network to *"encourage and strengthen NTFPs information-sharing and cooperation among organisations, individuals, and communities inside and outside the country to contribute to NTFPs conservation and sustainable development in Viet Nam".*

Under such favourable conditions, the NTFPs Network in Viet Nam was established in December 2003 with organisational support from FSIV and financial support from the NTFPs Project.

Participating parties in the establishment of the NTFPs Network include the NTFPs Project, the Viet Nam Forest Science and Technology Association (VIFA) and FSIV. The Network Executive Board (NEB) has been elected, including representatives from the forestry, health, conservation, development and enterprise sectors. Following its establishment, the NEB collected ideas and contributions from network members in order to revise the draft regulations for the network's operations, develop a workplan and arrange for the workplan's implementation.

According to the regulations agreed upon by all members, the network has five functions and tasks:

- Collect, exchange, update and disseminate information on NTFPs both inside and outside Viet Nam.
- Facilitate policy dialogues and support for developing policies related to the sustainable development, conservation and management of NTFPs.
- Facilitate technology transfers and cooperation in NTFPs research.

1 NTFPs Network Chairman

2 IUCN Viet Nam

- Contribute to awareness-raising regarding the role of NTFPs in conservation, bio-diversification and livelihood improvements for communities.
- Connect organisations and individuals working in the NTFPs sector in Viet Nam with regional NTFPs networks.
- The above-mentioned functions and tasks have been carried out in four fields of activities as follows:
- Members cooperated to establish a NTFPs database at the NTFPs resource centre and publish the NTFPs data and documents, according to demands identified by members.
- A forum was organised to discuss technical issues and NTFPs policies, and training courses, workshops, study tours inside and outside the country were conducted, according to demands identified by members and the NTFPs NEB.
- Support was given to identify directions and research topics under the framework of the two NTFPs project funds, as well for NTFPs technology transfer activities;
- Awareness-raising activities were coordinated for communities about the roles of NTFPs through the existing communication instruments of each member organisation and the mass media.

NTFPS NETWORK ACTIVITIES SINCE ESTABLISHMENT

Network operating mechanism

- There are no full-time members of the netowrk's NEB and even the secretary of the board has another role as the NTFPs project Communication Officer. She has been working part-time in the role and as the link between the NEB and NTFPs project. The network does not have its own office and has used NTFPs project facilities for meetings, discussions and establishing contacts.
- A long-term workplan for the network has been developed in accordance with NTFPs project considerations and an annual workplan is developed and submitted to the project for approval. The approved activities are put into the annual workplan of the project and are funded by the project for implementation. A NTFPs network workshop has been organised for the end of each year since 2003, which allows network members to summarise the activities conducted in each year, share lessons learnt and develop a workplan for the following year.
- In addition to providing financial support, the NTFPs project also provides necessary information and data for the network, while IUCN provides technical assistance. IUCN provides this assistance through its full-time staff and short-term international and national consultants, especially staff and managers of the forest conservation and reservation area programme under the IUCN's national representative office in Ha Noi (which is a member of the NTFPs NEB), IUCN's Asian Forest Conservation Programme in Bangkok and IUCN's Forest Conservation Programme based in Switzerland.
- The network received coverage in a publication and e-bulletin of the NTFPs project, and also has a section on the project's website (www.ntfp.org.vn).

Implemented activities

The NTFPs network in Viet Nam has officially been in operation from 2003 until 2006 and has carried out the following activities.

- Provided technical advice for the NTFPs project's research fund (RF) and action learning fund (ALF).
- Disseminated technical scientific information through contributing to and distributing the following publications:
  - NTFPs newsletter in Viet Namese and english (one issue per six months and then one per quarter) in both hardcopy and electronic format;
  - NTFPs Source Book for detailed information on nearly 400 NTFPs species in Viet Nam (published in first quarter of 2007);

- Q&A manual for bamboo and bamboo shoot plantation and tending techniques (published)
- technical manual for essential oil extraction (published)
- technical manual for awareness-raising and protecting valuable medicinal herbs (published in first quarter of 2007); and
- overview of NTFPs sub-sector in Viet Nam (in cooperation with the NTFPs project training group), published in the second quarter of 2007.

• Participated or led the following workshops, under the project's framework, to provide advice on techniques and NTFPs development policies:

- workshop on establishing mechanism for information-sharing inside and outside the network;
- workshop on introducing the RF and ALF funds and a workshop on lessons learnt from the implementation of the two funds in the first round of the NTFPs project;
- participated in developing the national strategy of NTFPs conservation and development 2006-2020 and the National Action Plan on NTFPs Conservation and Development 2007- 2010;
- organised a forum to collect ideas and contributions from local areas for drafting the National Action Plan on NTFPs conservation and development 2007- 2010; and
- participated in assessing and revising the design of the NTFPs project.

• Organised study tours for some members of the network to local areas and enterprises to learn from successful NTFPs activities.

• Introduced NTFPs resources and activities and related issues to many media agencies, who will help to disseminate and raise awareness about the roles of NTFPs in conservation, bio-diversification and improving livelihoods.

• Established an e-list for sharing information and connecting network members (this e-list is now available on the network's e-bulletin).

• Assigned members to attend a network workshop relating to NTFPs in the region to learn from other countries' experiences and disseminate this knowledge to local NTFPs network members (workshop on community forestry network in Nepal in 2006).

• Learn from the experiences of nepalese colleagues and with the active support of IUCN, the NTFPs network established a network working group in April 2007, which comprises international organisations concerned with NTFPs development and nature conservation in Viet Nam. Apart from meeting each two months for information sharing, the working group will help the NEB to develop strategies and maintain its activities. Though newly established, the working group is expected to have an important role in strengthening Viet Nam's NTFPs network.

ASSESSMENT OF THE EFFECTIVENESS OF NTFPS NETWORK ACTIVITIES

Achievements

• Contributed to the implementation of the NTFPs project phase II (technical advice for the implementation of RF and ALF, disseminated some achievements of the project through the NTFPs newsletter, developed the national strategy on NTFPs together with the project).

• Carried out some of the functions detailed in the network's regulations such as:

- collect, exchange, update and disseminate NTFPs information (e.g. held a workshop to identify a mechanism to share information and cooperate with mass media agencies);
- facilitate policy dialogues and support the development of policies related to the sustainable development, conservation

and management of NTFPs (e.g. held a forum to gather comments on the National NTFPs Action Plan);

- Facilitate technology transfers and cooperation in ntfps research (e.g. Provided technical advice and workshops on lessons learnt for the implementation of the two project funds); and
- Update, disseminate information, and connect organisations and individuals in Viet Nam working in the NTFPs sector (e.g. issued the NTFPs newsletter and some technical extension materials).

Constraints

- The member network is not stable and relations between members are still not close. The network's mechanism is not clear and the management board does not have enough experience in terms of organisation and being active in making proposals and managing the network's activities. Therefore, many items in the workplan cannot be implemented.
- While it is a national network, it lacks participation from representatives of different territories, specialised sectors and organisation types (i.e. NGOs, international and national projects, and private enterprises with experience in organising and managing networks, NTFPs production, processing and marketing), as well as adequate financial contributions to fund the activities of the network in the long-term.
- Recent activities conducted are limited in their links with the NTFPs Project, as the network is only one component of the project. They have not been applied nationwide and therefore the NTFPs Network's voice and contribution to the development of NTFPs in recent times is still not clear.
- The key motivation to join the network is the sharing of useful information, but in fact the information provided by the network is not practical or timely, particularly in terms of market information, which is very necessary for the network's members. Therefore, it cannot attract the long-term and active participation of its members.

Lessons learnt

The network is a kind of open, flexible and social networking tool. To ensure its effective operation, it is important to pay special attention to closely cooperating with various state management agencies and specialised organisations and individuals.

The achievements described above were due to:

- active and effective support from the NTFPs project, IUCN, FSIV, VIFA;
- dynamic and efficient cooperation among some members inside and outside the country on sharing scientific and technological information, and implementation, management and organisational skills; and
- appropriate selection of activities (newsletter, electronic news, manual hand book, information exchange forum and study tour in close cooperation with mass media).

However, the operational regulations of the network are not yet appropriate and there is a lack of clear stipulations on the obligations and interests of members. Therefore, the network is not yet organised as a tight system and cannot attract organisations and individuals to actively participate in network activities (especially in information-sharing among network members). This may threaten the sustainability of the network.

In addition, for the past three years, the network has only had one sponsor for its activities - the NTFPs Project Phase II. Seeking a substitute sponsor after the project is finished will be a great challenge to maintain the network's operations. A diversification of funding through attracting contributions from various donors, as well as ongoing technical and financial support from agencies, organisations, projects and individuals can be seen as the decisive factor ensuring the meaningful and sustainable performance of the network.

TOWARDS A NTFPs NETWORK THAT EFFECTIVELY AND SUSTAINABLY CONTRIBUTES TO NTFPS DEVELOPMENT AND CONSERVATION

After three years of operation, the NTFPs Network of Viet Nam has obtained some achievements, partly contributing to the development and conservation of the country's NTFPs. Its activities have been encouraged by national and international organisations, however its sole source of funding – the NTFPs Project Phase II - will end in June 2007. To maintain the activities of the network, the founders and the network working group have initiated the following activities.

Objectives

The general objective is that by the end of 2007/08, it is expected that a more effective and sustainable network will be established to contribute actively towards the implementation of the National NTFPs Strategy.

Short-term objectives include: adjusting the regulations and organisation of the network to strengthen the effectiveness of network's operation; and developing an action plan for the network in 2007 with a vision towards 2008 to facilitate the transition of the network.

General direction

- Strengthen the network's organisation to expand the scale and fields of operation, including stricter regulations for members of the working group.
- Seek a new funding source while diversifying financial support sources. Identify a new financing mechanism and involve the active participation from related organisations in implementation, technical and financial support so as to ensure the sustainable and effective operation of the network.
- The working group of the network will play an important role during the transition period to assist the neb to seek support, formulate activities and promote information-sharing and cooperation among organisations, projects and initiatives, in order to effectively contribute to NTFPs development and conservation in viet nam in the coming time.
- Combine activities and actively contribute to the implementation of government strategies, plans and programmes such as the viet nam forest development strategy for 2006 -2020, national ntfps proposal 2006-2020, national ntfps action plan 2007-2010, and ntfps support pilot programme 2007- 2010.
- Improve the quality of information and strengthen the mechanism for appropriate information-sharing among network members.
- Prioritise activities aimed towards community and hunger poverty alleviation through ntfps conservation and development.
- Strengthen international cooperation activities.

Future activities

- The network conference will be held at the end of June 2007 in order to consolidate the institution, approve the revised regulations, select a new executive board and ratify the action plan.
- The working group and new executive board shall actively discuss combining and integrating the network's activities with line agencies such as the Forestry Department and MARD so as contribute to the implementation of policies issued by MARD and the government.
- Further maintain information-sharing activities such as meetings, publishing the NTFPs newsletter, etc.`

A Cross-Country Exchange Workshop on Non-timber Forest Products (NTFPs) Enterprise Development for Poverty Alleviation, Vientiane, Laos, 24-27 April

Joost Foppes[1]

INTRODUCTION

The National Agriculture and Forestry Research Institute of Laos (NAFRI) organised a cross-country exchange workshop on Non-Timber Tree and Forest Product (NTFPs) enterprise development for poverty alleviation in Vientiane on April 24-27, 2007. The event was supported by the Forest Programme Facility (Rome), SNV, CIAT, FAO and WWF and had the following main objectives:

• to exchange lessons learned and discuss new issues identified from experiences in NTFPs enterprise development; and

• to generate options for developing effective approaches to build on positive experiences and deal with emerging issues.

Some 60 participants attended from a wide range of countries including Nepal (1), Thailand (6) Viet Nam (6), Cambodia (2) and Laos (40). The workshop consisted of two days of meetings and a one-day field trip to Sangthong district, a bamboo growing area 50km west of Vientiane. The methodology comprised a mixture of short presentations with group discussion exercises, along the lines of the "world café" technique.

KEY OUTCOMES OF THE WORKSHOP

NTFPs have good potential for large-scale impacts on income generation for poverty alleviation

The world forestry agenda has evolved from social forestry to small forest-based enterprises (SMFE). New markets are evolving that favor SMFE such as furniture, pulpwood, ecotourism, medicinal plants and fair trade products (Sophie Grouwels, FAO).

In Nepal, 50,000 families have doubled their income from NTFPs such as medicinal herbs and handicrafts over the last 10 years (Bhishma Subedi, ANSAB Nepal).

The bamboo flooring industry in Indochina could employ five million people through a variety of value chains. Bamboo flooring products seem to have the best potential for large-scale value adding and a multi-stakeholder approach for promoting the bamboo sector in Indochina has been proposed (John Marsh, Oxfam Hong Kong).

Posa paper mulberry plantations in Laos could cover 30,000 ha, providing incomes for 200,000 people. However, more support is needed to expand successful village enterprise development models and link them to local traders and investors. Business development services (BDS) providers, such as input suppliers and tool producers, are key catalysts for this process (John Connell, CIAT, Laos).

The price of rattan canes in Laos increased by 10 times over the last 10 years as natural resources continued to be rapidly depleted. Farmers should capitalise on this development by starting rattan plantations, which can be expected to yield high revenues in the medium- to long-term (Bouaphet Bounsourath, WWF, Laos).

1 SNV Laos

Key approaches for large-scale NTFPs sub-sector development include:

- an integrated value chain approach;
- scenario studies;
- impact assessments;
- building producer organisations; and
- sector-wide investments.

Field projects yield valuable lessons on how to achieve such impacts

In Thailand, NTFPs enterprises are set up in rural areas, responding to urban demands for herbal and organic products. Visionary group leadership, establishing links with herbal health centres, networking and advocacy are key factors of success (Nithaya Khiyawatchakul, Mahasarakham University, Thailand).

In Viet Nam, the IUCN-NTFPs Project has supported thousands of families to create new livelihoods from producing NTFPs in gardens and handicraft training. Local awareness is also being raised through local herbal medicine centres (Cao Thanh Hung, NTFP project, Viet Nam).

In Laos, a village group producing pickled bamboo-shoots managed to increase their income significantly from improved product packaging, which improved the shelf-life and the quality of their product (Phouvong Bounsou, Oxfam Belgium).

Also in Laos, the IUCN presented a study on how the results of a successful example of a village group selling fresh bamboo-shoots could be measured in many ways. There was huge potential for 'vertical up-scaling', as the case served to put NTFPs on the national development agenda. 'Horizontal up-scaling', or the replication of the model by many other villages, was limited by factors such as the effort it takes to develop a strong producer group. (Latsamay Silavong, IUCN, Laos).

A lack of an enabling policy environment and BDS stand out as key bottlenecks to NTFPs enterprise development

In Laos, the private sector is best placed to find markets, promote crops and find viable modes of production, and invest profits in technology. For example, since 2000, Friends of the Upland Farmer (FUF) has invested $500,000, creating incomes for 1,400 families producing cardamom, broom grass and maize for export (Peter Dutton, FUF, Laos). Yet private sector companies face many issues.

Time-consuming, complicated government trade regulations are a key bottleneck to NTFPs enterprise development. During the workshop, cases were presented on analysing complex chains of fees in the bamboo sector (Latsamy Boupha, NUOL, Laos) and developing supportive quota and taxation systems for arenga palm fruits (Phongxiong wanneng, SNV, Laos).

A lack of BDS is a second obstacle preventing successful NTFPs enterprise development. A case study showed how bottlenecks in trade from Laos to China could be removed by establishing bulk drying and bulk storage facilities, basic market information systems that disseminate quality standards, and improving consultation between stakeholders in trade policies (Khamphou Phouyavong, NAFRI, Laos).

Development projects should work more with the private sector and expand local capacity to facilitate trade at the district level. Governments need to simplify the export process, standardise tax laws nationwide, increase their transparency and ensure the sanctity of contracts.

MAIN RECOMMENDATIONS

We have good methodologies for NTFPs enterprise development, but more support is needed to expand such activities

Two key approaches from Laos were presented: the Marketing Analysis & Enterprise Development (MA&D) approach developed by FAO, RECOFTC and NAFRI (Vongvilai Vongkhamsao, NAFRI); and the Agro-Enterprise Approach, developed by CIAT-SADU and NAFRI (Ounkeo Phattamavong, CIAT-SADU). These approaches have a number

of common elements: (1) identifying target groups, products; (2) value chain analysis; (3) linking producers to markets; (4) training, building producer organizations; and (4) linking marketing with innovative resource management.

These approaches have been field-tested and Lao-language training manuals are available. It was stated that they are now ready for up-scaling in agricultural extension projects/programmes.

A case was also presented on testing the causal mapping approach in the case of the "posa" paper mulberry sub-sector in Laos. This approach can identify critical points of intervention and can also help to overcome differences in perceptions between stakeholders (Maria Miquel Ribeiro, BOKU).

We need more investment in innovative approaches to establish a supportive policy environment and BDS

While there are now good methods available for assisting producer groups to develop small NTFPs enterprises, new NTFPs enterprises still face many challenges to negotiate a supportive policy environment and gain access to BDS. Researchers, donors and governments need to invest more in innovative approaches to establish good models of these two supportive elements.

More support is needed for cross-border cooperation to develop NTFPs sub-sector development approaches

Presentations were given on recent and upcoming regional NTFPs exchange events. The following suggestions were made in discussion groups for future cross-border cooperation:

- Cross-boundary value chain studies should be conducted on selected products;
- Cross-boundary village group exchange visits should be arranged;
- A regional directory of suppliers of NTFPs seed material and advice on domestication techniques should be compiled;
- A regional training network should be created for the development of best practices in partnership with local capacity building providers (e.g. ANSAB, Universities);
- Development and distribution of supportive e-forums, e-newsletters etc.; and
- Increasing the number of regional exchange events.

A FRAMEWORK FOR ACTION

In summary, a simple framework is proposed as a tool for identifying the key conditions and priority actions needed for successful NTFPs enterprise development. The key conditions are: (1) secure access to natural resources; (2) sustainable NTFPs production systems; and (3) efficient marketing systems to generate income from NTFPs production.

Governments, the private sector, donors and NGOs can contribute to securing these conditions through three main types of interventions: (1) establishing an enabling policy environment; (2) providing basic services; and (3) targeted investments.

Most of the above groups are currently active in only a few of the six fields of action in the table below. NTFPs enterprises in poor rural communities need support in all six fields. Covering just a few more fields in the future may mean the difference between failure and success for such initiatives.

Key conditions	Enabling Policy Environment	Basic Services	Investment
1. Secure access to natural resources	• Clear rights to use land, forests, water • Independent courts of appeal	• Land use registration and mapping services	• Special funds for regulated access systems in priority vulnerable areas (e.g. national parks)
2. Sustainable production	• Policies that recognise and protect local knowledge • Tax incentives for sustainable forest management • Mandatory EIAs for investments	• Documenting and exchanging local knowledge • Delivery of planting materials • Information and training services on best cultivation practices	• Invest in delivery of basic services • Invest in incentives for sustainable production
3. Generating income through marketing	• Uniform, clear and efficient trade and tax regulations • Clear regulations on contract farming • Clear rights for producer groups to organise themselves • Development of national quality standards systems • Regional agreements on reduced tariffs • Policies promoting SMEs • Sectoral strategies	• Value chain analysis including market research, market information systems Improved communication systems • Basic business skills training • Strengthening producer associations • Production and supply of inputs and equipment • Impact assessments, baseline monitoring, statistics etc.	• Investment in value-adding processing industries • Sectoral feasibility studies for pro-poor investment • Micro-credit schemes for SMEs

An Innovative Approach to Information Sharing from Research on Non-timber Forest Products: Some Experiences from the NTFPs Sub-Sector Support Project in Viet Nam

Sharon Brown[1] and Fernando Potess[2]

BACKGROUND

Research institutions working in the forestry sector in Viet Nam have the mandate to develop practical research outcomes that can be readily used to improve the livelihoods of local communities or householders living in and around forest areas, and contribute to local and national socio-economic development. Researchers, foresters, economists, and conservationists have recognised that Non-Timber Forest Products (NTFPs) are vital for the subsistence lifestyle and cash generation by poor people living in mountainous areas and within forest landscapes. It is suggested that well-organised small, medium, and large enterprises based on the use of NTFPs have the potential to generate economic benefits through local, regional and international markets.

NTFPs researchers have a formidable task. They need to advise on how forests can be managed in an ecologically sustainable way and how the equitable use of NTFPs can contribute to biodiversity conservation. They must consider a diverse range of topics such as the ecology, biology, genetic improvements, agronomy, and post-harvest technologies for planted species. If species are harvested from natural forests, knowledge of methods for sustainable harvesting are also needed, as well as an understanding of how not to exceed the carrying capacities of the resource base. Irrespective of the source of the NTFPs, knowledge about socio-economic issues and marketing is also needed. The socio-economic aspect of NTFPs for livelihoods improvement would depend significantly on this knowledge, tailored to a very wide range of plant and animal species in an assortment of environmental niches.

The NTFPs Sub-Sector Support Project

Research agencies in Viet Nam often lack the capacity to undertake research and analysis that will answer the pressing needs of farmers and forest-dependent households. In some cases research does not take into account existing knowledge, particularly indigenous knowledge about NTFPs, or consider gender issues in the design of research trials. The NTFPs Sub-Sector Support Project, executed by the Forest Science Institute of Viet Nam and implemented by the IUCN Programme in Viet Nam, has utilised an innovative approach in researching NTFPs in order to deal with these difficulties. It entailed the establishment of two small-scale research initiatives, or NTFPs Research Sub-projects. The first - a 'Research Fund' - was designed to help strengthen the capacity of research agencies, while the second - an 'Action Learning Fund' - provided researchers with a vehicle to work directly with end users, thus allowing them to modify approaches as the project evolved.

National institutions were invited to apply for these funds and a multi-disciplinary team composed of over 100 scientists from 28 different institutions, including government and non-government organisations (NGOs) and community groups, were selected to undertake a total of 44 projects.

1 University of Queensland
2 NTFPs Sub-Sector Support Project

These sub-projects covered six major topic areas, including genetic resources, propagation, cultivation, sustainable harvesting, post-harvesting, and marketing. The sub-projects covered a large geographic area with most of the nine ecological regions in Viet Nam represented. The overall programme of research sub-projects aimed to foster partnership building, the institutionalisation of effective resource use, and improve gender responsiveness in project implementation within host and partner organisations and in project outcomes. This paper discusses the achievements and lessons learned through this programme and makes recommendations for future approaches in research and development projects, and in the communication of research outputs. The results and discussions presented have been compiled following an analysis of surveys and evaluation data collected from each of the research sub-projects undertaken by the NTFPs Sub-Sector Support Project.

How do action learning, research and extension differ?

The final assessment of the NTFPs Sub-Sector Project showed that in general, there was little distinction between the contents and implementation methods of the Research Fund and the Action Learning Fund. Funded sub-projects under both programmes were mainly oriented towards implementing field trials with farmer assistance. Although most of the projects produced results in the field that were appreciated by farmers, it appeared that about 70 per cent of these attempted to generate new knowledge through research, while the rest focused on extension (Table 1).

The percentage of sub-projects lacking a total focus on innovative research for knowledge generation shows a certain level of confusion about the distinction between research approaches and extension, which is not limited to Viet Nam but is widespread throughout developing countries (Dr Don Gilmore Pers. Com., 2007).

The action learning approach was originally developed to support the implementation phase in project development. It uses a cyclical process of planning, acting, observing, and reflecting during implementation. The design allows the flexibility needed to change practices following regular reviews of progress in the field. This "learning by doing" approach allows farmers to learn along with the researchers and allows them to adapt their methods in order to achieve the desired result. Extension is often achieved through farmer-to-farmer interactions. For these reasons, the action learning approach has been widely accepted by researchers, particularly those who work with farmers or communities to develop new livelihood enterprises and those who need community cooperation to improve natural resource management systems. The traditional approach to research, on the other hand, answers clearly defined questions using robust scientific methods. After the research results have been developed, the new technical knowledge must then be transferred to other researchers and to end users. There is no doubt that there is a need for both approaches and that the results from basic research should form the basis of action research projects.

Results

The final evaluation team for the NTFPs Action Learning Fund and Research Fund visited a total of 21 projects, interviewed researchers and farmers, and inspected field sites. Table 1 is a summary of the responses to key questions from 19 of the Action Learning Fund Sub-projects. Question one was assessed by two senior scientists from the assessment team and questions two-to-eight were answered by farmer participants and implementers who were involved in 19 of the Action Learning Sub-projects. Answers were ranked as – excellent, good, acceptable, or not acceptable. The table indicates the number of answers of excellent or good as a percentage of the total.

Table 1. Summary of responses to key questions from 19 Action Learning Fund Sub-projects

Questions		% classified as excellent or good
1	Was this project innovative – was this new research?	68
2	Was the methodology appropriate for the activities being implemented?	74
3	Was the technical support provided during the project adequate?	69
4	Was communication and dissemination of new information effective?	63
5	Were the activities continued by farmers without project support?	58
6	Was indigenous knowledge used by researchers?	42
7	Were gender issues addressed by the project?	31
8	Are the activities introduced by the project sustainable?	32

The results show that the project methodology was effective in delivering much-needed technical knowledge support to poor farmers. It is also encouraging that a significant number of implementers have continued with project activities after assistance from the project had finished. This supports a report commissioned by the project and prepared by Raintree et al. in 2007 entitled "NTFPs impact on poverty, national development and biodiversity conservation through creating livelihood assets". The survey and report was designed to obtain the villagers' own assessment of the relevance and impact of the activities promoted by the project. The survey interviewed more than 100 people from eight sample villages. Survey results also showed that participants in project activities highly valued the project's provision of knowledge and skills, including advice on how to work in different ways and make more productive use of household labour. This fact is also somewhat corroborated in the above table, as questions two-to-five indicate the appropriateness of information skills that were strengthened by Research Sub-project activities.

Gender and indigenous knowledge

Although there was a mandate to do so, many of the Research Sub-projects did not deliver as well on gender issues or use indigenous knowledge as much as had been hoped. This is not an isolated problem. It is common for projects to intend to undertake work on these issues but fail to do so. The importance of involving women in the success of projects can be illustrated through the experiences of one of the Action Learning Fund Sub-projects entitled "Cultivation and development of ginger and saffron in the forested areas of Ha Tinh province". The excellent field trials and the high level of farmer interest led the evaluators to assess this project as one of the most successful in the programme. Table 2 below summarises the many components that participating farmers and evaluators considered key factors contributing to the success of the project.

Table 2. Cultivation of Ginger and Saffron in the forested areas of Ha Tinh Province

Reasons for success in order of importance
1. The farmers were interested in the topic
2. A group of farmers formed a club – The Forestry Perfume Club.
3. The club was composed of mainly women members
4. The site conditions were suitable for growing the two species
5. The local people know about these species and routinely harvest them from nearby natural forest
6. Low capitol inputs needed
7. There is a good market for the products and the farmers know the buyers
8. The price paid for these products provides good economic returns for labour input
9. The project approach was good with a large emphasis on field work
10. The trainer -
a. Used appropriate training topics
b. Had good technical knowledge
c. Understood the needs of farmers
d. Able to relay information in a simple manner (few words and pictures)

Flexibility and Cost Benefit Analysis

Researchers sometimes miss good opportunities because they follow the original project document too rigidly and fail to modify activities to suit the conditions or new knowledge gained as the project evolves. One example of this is a project on the production of mushrooms in Ha Long City. On one hand the project was a great success with over 200 farmers trained and able to grow mushrooms at the end of the training. All of the project activities were completed on time and within budget. However, only one of the original 200 farmers continues to grow mushrooms. The reason for the poor result in this case was the lack of a cost benefit analysis. The high cost of materials relative to the price paid for mushrooms, and the ready availability of alternative labour in the city, led to this lack of uptake by farmers. If the project implementers had responded to this information, and transferred the project to an agricultural area where raw materials (wood and rice straw) are readily available and off-farm labour is scarce, activities would have most likely been continued, making the sub-project a success. Table 3 assesses this project according to the criteria established in Table 2 above.

Table 3. Production of mushrooms in Ha Long City

Criteria	Yes/No	Comments
Farmer interest in the topic	Yes	There was wide farmer interest
A group of farmers formed a club	No	No farmer club formed
Mainly women participants	Yes	Mainly women
Site conditions were suitable	No	The price of raw materials needed for growing mushroom very high in city areas (but cheap in the country)
The local people know about these species	No	Mushroom growing is highly technical and not commonly undertaken in the area. However the technical training was sufficient to overcome these problems.
Low capitol inputs needed	No	Investment is needed for sterilisation equipment
There is a good market	Yes	There is a good market in Ha Long city
Good economic returns for labour input	No	The returns were less than the local people could get for locally available jobs
Large emphasis on field work	Yes	Farmers were trained and provided with all of the necessary equipment
The trainer was good	Yes	The quality of training was very high and did not contribute to the disappointing results of the project
Training topics were suitable	Yes	Topics were appropriate and the farmers were able to grow mushrooms at the end of the training
The trainer had good technical knowledge	Yes	Trainers had good technical knowledge at the level needed by the farmers
The trainer understood the needs of farmers	Yes	Trainers delivered the training in a manner that could be understood by the trainers

Flexibility and markets

It is well known that attention should be paid to markets before embarking on a new project. But, in many projects, any detailed study of markets is usually not undertaken until the project has been written and approved. Another common problem within the general research community is a reluctance among implementers to react to market information during the implementation phase of a project, as doing so would not allow them to achieve the agreed milestones, which would then cause difficulties in the release of funds from the budget. There have been reports of large international projects commissioning expensive socio-economic surveys and then ignoring the information that they contain (Mr Hieu, ICARD, MARD, pers. com).

In contrast to the mushroom project, which had good local markets, a project promoting the cultivation of lemon grass had very low farmer uptake because implementers did not heed the market information. The project is assessed in Table 4 below.

Table 4. Planting Citronella (Lipia citrodora) and extracting its ethereal oil

Criteria	Yes/No	Comments
Farmer interest in the topic	Yes	There was wide farmer interest because there are few species that will grow on sandy soils in the area
A group of farmers formed a club	No	No farmer club formed
Mainly women participants	No	Mainly men
Site conditions were suitable	Yes	Lemon grass grew well on these difficult soils
The local people know about these species	No	Growing lemon grass in these areas is not common
Low capitol inputs needed	No	Investment is needed for distillation equipment
There is a good market	No	There is no good local market for the product
Good economic returns for labour input	No	No, the price of oil is very low and does not provide a return on the labour required
Large emphasis on field work	Yes	Good field trials were established
The trainer was good	Yes	The quality of training was very high and did not contribute to the disappointing results of the project
Training topics were suitable	Yes	Topics were appropriate and the farmers were able to grow the products and prepare them for processing
The trainer had good technical knowledge	Yes	Trainers had good technical knowledge at the level needed by the farmers
The trainer understood the needs of farmers	Yes	Trainers delivered the training in a manner that could be understood by the trainers

Need to understand the needs of different socio-economic groups

The project commissioned a Participatory Rapid Assessment survey of cooperating householders that provides a clear understanding of the degree of dependence on NTFPs by different economic groups within a community ("Household income and the Role of NTFPs" by Raintree et al. 2007). This classification of community by economic status provides development workers with key guidelines on how to integrate activities to best support different groups across the whole community.

(i) Upper income households do not spend much time collecting or growing NTFPs but they are most likely to be traders.

A good use of resources for this group would be to support post-harvest activities such as processing and quality control. Both of these latter activities have the potential to lead to improved local income for the same product, and some of the benefits of the additional jobs created are likely to flow down to the poorest group. Households of this income level are also the most prone to taking risk, and therefore are key subjects for assimilating and expanding the results of project interventions (pers. obs. By Potess, PARC Project – Viet Nam, NRM Project – Indonesia, Amacayacu Project – Colombia/ Brazil, other.)

(ii) Middle income households are more reliant on NTFPs and tend to be the most responsive to project activities such as domestication and ex situ cultivation of NTFPs.

The best investment of resources for this group may be to assist them to cultivate high-value NTFPs and help them develop access to the most profitable markets. Households under this income level are usually able to take risks in adopting new technology related to activities promoted through project interventions. Villagers in this category are key innovators and leaders in the adoption of modalities (ibid. personal observation by Potess; and Raintree Pers. Com.).

(iii) The poorest households are typically most dependent on forest resources and the most active collectors of NTFPs. This finding is supported by earlier work which showed that 78 per cent of poor people exploited forest areas compared to 63 per cent among non-poor (Mekong Economic Ltd, 2005. Rural Economics Baleline Survey for the Tam Dao National Park Buffer Zone; Technical Report for GTZ-Viet Nam, GTZ-Viet Nam, Ha Noi). Both reports highlight poor villagers' lack of sufficient cash, land, labour and other assets to allow them to develop long-term ventures and, as a result, they are likely to continue to rely on harvesting NTFPs from natural forests.

The best investment for the poorest group may be to provide an understanding of sustainable harvesting practices and some investment in forest enrichment. Households in this category are seldom able to take the risks involved in adopting new technologies, and usually follow the lead from households who have the means and capacity to do so. This means households mainly in the middle-income bracket, which are willing to take cautious risks when adopting new measures (ibid. personal observation by Potess; and Raintree Pers. Com.).

Conclusion

An analysis of the lessons learned from this project has provided important insights that can be used by donors, researchers and implementers of research and development projects.

Projects should:

- clearly define the differences between research and extension and how this relates to the project objectives;
- be flexible so that changes can be made in the light of new knowledge;
- pay more serious attention to gender issues and take advantage of indigenous knowledge; and
- tailor project activities in line with the implementation capacity and potential risk adoption and innovation among participant households.

Some ways to assess projects that aim to work with communities and farmers are to determine if:

- farmers are interested in the topic;
- farmers have formed a farmer group or club;
- the project includes women participants;
- there are suitable site conditions;
- the local people know about the species being promoted;
- low capital inputs are needed;
- there is good market access;
- there are good economic returns for the labour input;
- there is a large emphasis on field work; and
- the project has high-quality trainers who provide suitable topics, have a good and appropriate technical knowledge (not necessarily academic experience), and understand the needs of farmers and how to convey information.

Projects need to be flexible and act upon cost benefit analyses. Farmers will not continue project activities without support if they do not earn enough to justify the labour input. Implementers also need to react flexibly to market information

rather than simply generate it as part of a project's activities.

Projects must be based on an understanding of the needs of different socio-economic groups involved in NTFPs. A project survey provided valuable guidelines on how to disperse project assets according to economic circumstances and identified the following key activity delineations.

- **Upper income households:** provide support for post-harvest activities such as processing and quality control
- **Middle income households:** provide support for the cultivation of NTFPs
- **Poorest households:** provide an understanding of sustainable harvesting practices and some investment in forest enrichment

THEME 3:

POLICY AND STRATEGY

Policy on Non-Timber Forest Products in Viet Nam

Pham Xuan Phuong[1]

BACKGROUND

In Viet Nam, the use of Non-Timber Forest Products (NTFPs) is often closely associated with the livelihoods of forest-based communities. Within the last decade, traditional trade villages that use NTFPs have been rehabilitated and have undergone rapid development. In addition, the country's international economic integration process has created significant opportunities for enterprises, households, individuals and trade villages involved in NTFPs production and trade.

However, Viet Nam, like many other developing countries, has focused on exploited mainly timber in the past, and paid less attention to the management, preservation and development of NTFPs. Therefore, as the country's natural forest area has been depleted, NTFPs resources have also been greatly reduced, resulting in significant impacts on the lives of forest-dependent communities.

In this context, the following questions emerge:

- How are policies relating to NTFPs developed in Viet Nam?
- What is the legal framework for NTFPs, and what are the effects of these policies?
- What is the role of NTFPs in creating incomes, jobs and developing the socio-economy of central and mountainous areas?
- What are the obstacles to preserving and developing NTFPs?
- How can NTFPs policy development be improved in the coming time?

In order to answer these questions comprehensively, there is a real need to conduct further research into economic, technological, legislative, policy and social issues. Nevertheless, this paper will attempt to address the above questions by analyzing and assessing current NTFPs policies, and proposing future policy orientations for NTFPs in Viet Nam.

The paper consists of 4 parts:

- Major legal documents relating to NTFPs policies in Viet Nam
- NTFPs policy development process in Viet Nam
- Implementation and impact of NTFPs policies
- Recommendations to NTFPs policies in Viet Nam for the years to come

MAJOR LEGAL DOCUMENTS RELATING TO NTFPS POLICY IN VIET NAM

Until recently, there has been no specific legislation framework for NTFPs in Viet Nam. However, due to the increasing need to address the issue, policies on NTFPs have been mentioned in some legal documents. Between 1954 and 2007, the Viet Namese Government issued more than 50 legal documents relating to NTFPs policy. By May 2007, 29 of those legal documents were still in valid comprising: six laws and ordinances; nine government decrees, five Prime Minister documents; and nine ministerial-level documents.

Specific policies on NTFPs are only mentioned briefly in some chapters, articles or items of the above-mentioned documents, and in general, focus on the following issues:

- Tax adjustments for NTFPs exploited from natural and artificial forests;
- Investment and credit policy for NTFPs afforestation and processing;

1 Legislation Bureau, Ministry of Agriculture and Rural Development

- Policies on NTFPs exploitation and utilisation and the beneficiaries involved; and
- Policies on distributing NTFPs.

NTFPS POLICY DEVELOPMENT PROCESS IN VIET NAM

Period from 1954-1990

For a long time, timber was considered the main forest product, and NTFPs were thought of as 'sub-forest products'. Forestry policies were mainly concentrated on regulating the income sources from natural forest products in order to increase the state budget through license granting and tax collecting. No attention was paid to the preservation and development of forest products, including NTFPs.

In 1954, Inter-ministerial Decree No. 8-CN-TC, issued by Ministry of Finance and Ministry of Agriculture, regulated the method for calculating prices for selling forest products. This document also stated that all the products derived from national forests were state assets; therefore exploiters had to forfeit a percentage of income they generated from such products to the government. This rate was determined by a percentage of the market price of the forest product concerned and only applied to some types of forest products such as bamboo, neohouzeaua (a special kind of bamboo), rattan, etc. From 1956 to 1957, the government added certain types of seeds, vegetation oil, forest rubber and fresh bamboo shoots to the list of forest products subject to taxation. For 'sub-forest products' (or NTFPs) cultivated by farmers on public land where agricultural tax has not been paid, the tax rate stood at 7 per cent of the average market price.

At the beginning of the 1980s, the government still maintained a policy of regulating the benefits derived from natural forest exploitation, including NTFPs, however, attention began to be paid to protecting and developing natural forest resources, including NTFPs.

In 1981, the government changed its policy from collecting tax on the sale of forest products to collecting tax on the use of forest resources. Every organisation and individual who exploited the forest had to pay an amount of money to use forests protected and developed by the government. Eighty per cent of this money was kept by local authorities for forest protection and developing the locality, while the remaining 20 per cent was paid to the central budget to fund general forest protection and development activities. The tax rate was calculated according to a percentage (5 per cent) of a product's sale price, regardless of whether it came from natural or cultivated forest.

However, this previous 'forest growth tax' has now been incorporated into the tax on natural resources, and there are currently no separate regulations on contributions for forest protection and development.

Period from 1990 - 2007

From 1990-2007, policies on NTFPs concentrated on the following issues.

Management and preservation of NTFPs

In 1992, the government issued Decree No. 18/CP, which included a list of precious and rare species of forest flora and fauna, as well as regulations for managing and protecting these endangered species. In 2002, the government issued Decree No. 48/CP, which provided revisions and additions to Decree No. 18/CP.

On March 30, 2006, the government issued Decree No. 32/2006/NĐ-CP, which replaced Decree No. 18/CP and Decree No. 48/CP, and stated that areas with forestry vegetation, or forest areas where precious and rare animals are living, must be clearly specified on the nation's map. In addition, the regulation declared that forest areas with abundant forestry vegetation, areas that contain endangered animals, or species on the verge of extinction, must be considered for being declared specialised forest areas.

Forest vegetation and animals on the verge of extinction, and precious and rare species of forest flora and fauna were arranged in two groups:

- Group I - vegetation of type (IA) and animals

of type (IB), which have special scientific, environmental or economical value, and have small populations in the wild or are in serious danger of becoming extinct; and

- Group II - vegetation of type (IIA) and animals of type (IIB), which have high scientific, environmental or economical value, and have small populations in the wild or are in serious danger of becoming extinct.

The regulations prohibit trade in flora and fauna from both groups I and II, and permission is required from the Ministry of Agriculture and Rural Development (MARD) to use any of the species described. Scientific research is allowed for Group II in specialised forest areas, however international agencies must seek permission to use any of the flora and fauna described. Control of Group IIA species is specified within the Regulations on Timber and Other Forest Product Exploitation, approved by MARD. For forest animals within Group IIB living outside special areas, permission for any activities aside from research must be sought from relevant central or provincial departments.

Policies relating to production, processing, trading and marketing of NTFPs

Plan for forest product areas, including NTFPs

Decision No. 661/QĐ-TTg (dated July 29, 1998), issued by Prime Minister for a new 5-million hectare afforestation project (Decision 661 for short), strongly affected the formation of forest material areas, including NTFPs areas. This document regulated incentives for forest regeneration activities, including planting NTFPs in protected and cultivated forests, and considers natural forest regeneration as an important tool for forest rehabilitation, including NTFPs. Other legal documents also encourage the development of NTFPs trees for making fine art products.

Policies on land and forest allocation

According to regulations stated in the Land Law (2003), and the Forest Protection and Development Law (2004), the state delivers land use rights and forest use rights to organisations, households and individuals for long-term and sustainable use. These regulations on assigning and transferring ownership rights among land and forest users (forest holders), as well as the policy on renting land and forest areas, has created favourable conditions for the formation of forest product material areas, including NTFPs.

Policies on investment and credit

The Investment Law and implementation guidelines regulate forest use in general, including growing NTFPs trees, forest product processing, and trading in traditional fine art. Various groups benefit from preferential investment treatment, including trading businesses (list A), mountainous areas or areas facing socio-economic difficulties (List B), and areas facing special socio-economic difficulties (List C).

According to the regulations of this law, NTFPs afforestation activities enjoy preferential investment treatment, including a reduction in land use fees (50 per cent reduction in general areas and 75 per cent reduction or total exemption in areas facing difficult or extremely difficult socio-economic problems). In addition, such activities will be exempt from land rental costs for between three-to-six years from the date of signing the land lease. In areas of socio-economic difficulty, this exemption extends to between 11 and 15 years, while for areas facing extreme socio-economic difficulties, a complete land rental exemption applies for afforestation projects.

Currently, most NTFPs afforestation activities are carried out in difficult or extremely difficult socio-economic areas. Thus, such activities satisfy preferential treatment criteria for both type of activity and location.

Credit policies

There are currently two types of credit relating to NTFPs afforestation, namely government preferential credit and trade credit.

Government preferential credit is provided for NTFPs afforestation projects, processing facilities,

and bamboo and handicraft producing units. Such groups are allowed to receive loans with interest rates equivalent to 70 per cent of the average medium- and long-term interest rates of the state commercial banks, with a maximum loan duration of 15 years. The total loan must not exceed 70 per cent of the group's total investment capital.

In terms of trade credit policy, banks can loan up to VND10 million to households processing forest products or producing bamboo, rattan and handicraft products. Borrowers are not required to mortgage any property, but must attach their land use rights certificate to the application for the loan. Up to VND20 million can be loaned by state banks to households or individuals operating farming businesses. Again, borrowers are not required to mortgage any property, but must attach their land use rights certificate to the application for the loan.

NTFPs exploitation

Exploitation of NTFPs in natural production forest

Special regulations exist for the exploitation of bamboo and neohouzeaua in natural production forest areas. These areas must have a covering of over 70 per cent, with long- and medium-term trees making up more than 40 per cent of the total flora. The exploitation cycle ranges from two to four years and allows one-quarter to two-thirds of the total trees to be harvested, provided they are more than two years old.

In term of submission and approval procedures, the Department of Agriculture and Rural Development (DARD) approves an application document and grants a provincial exploitation permit to forest owners who are members of a corporation or general corporation. The People's Committee at the district level provides exploitation permits to forest owners who are households, individuals or rural communities.

Other NTFPs exploitation and harvesting issues are decided by forest owners, while permits for exploitation and harvesting are provided by the communal People's Committee for forests under their management. The regulations also state that the exploitation of NTFPs (except bamboo and neohouzeaua, which have specific regulations) must have no negative impact on the growth and development of each species.

NTFPs exploitation in protected natural forests

Specific regulations exist for bamboo and neohouzeaua forests, which must have a forest coverage of over 80 per cent and a maximum exploitation speed of 30 per cent. DARD approves the application documents and grants permits to forest owners belonging to provincial organisations. General corporations approve and issue exploitation permits to their members who are forest owners, while district People's Committees provide households, individuals and rural communities with exploitation permits.

Other NTFPs exploitation and harvesting issues are decided by the forest owner, but any activities conducted must not affect the protective capability of the forest.

Benefit policy

Households and individuals who are provided with natural forest for production are allowed to exploit bamboo and neohouzeaua, according to current technical procedures. After paying taxes, households and individuals can keep 95 per cent of the revenue they earn, while the remaining 5 per cent must be paid to the state budget (commune budget). Households and individuals who are provided with forest land, which is not already being used for production or afforestation activities, have the right to make their own decisions regarding: the aim and method of afforestation (eg. promotion of regeneration or new afforestation); selection of trees for planting; and the exploitation and use of forest products. All exploited products must be freely circulated.

Circulation and consumption of NTFPs

Current documents regulate the inspection of forest product processing and transportation procedures. According to the regulations, rattan,

bamboo, reed products, planted wooden products, wooden handicrafts (comprising a mix of rattan, bamboo and reed) and other forest plant NTFPs are allowed to be processed for export. The import and export of wild animals and plants for commercial purposes is prohibited, as stated in Appendix I of the CITES Convention. The import and export of wild animals and plants, which are artificially reproduced for commercial purposes, is permitted, as stated in Appendix I of CITES Convention. The import, export and re-export of wild animals and plants with a legal basis for exploitation can only occur if relevant certificates are issued by authorised CITES control bodies.

Taxes imposed on NTFPs trade

Agricultural land use tax

Laws on agricultural land use tax came in force on January 1, 1994, and other legal documents regulate land for economic afforestation, under which NTFPs afforestation has a tax rate of 4 per cent of the exploited product's value. From 2003 to 2010, organisations and individuals investing in NTFPs development are exempt, or enjoy reduced, agricultural land use tax.

Tax on exploitation of natural resources

The ordinance relating to taxing natural resource exploitation activities regulates products produced from natural forest, under which the tax rate imposed on bamboo, neohouzeaua, reed species, bamboo (for ropes), bamboo with long stems and large leaves, and apricots is 10 per cent. The tax rate imposed on rattan products is 5 per cent of the exploited product's value.

Value added tax (VAT)

VAT regulates a wide range of products and services, including afforestation products which have not been processed into other products, or have been only primarily processed by organisations and individuals. A tax rate of 5 per cent is imposed on products exploited from natural forests, including rattan, bamboo, neohouzeaua (which has not been processed commercially), and products made of jute, rush, bamboo, neohouzeaua and rattan.

IMPLEMENTATION, ORGANISATION AND IMPACT OF NTFPS POLICIES

There are almost no specific policies on NTFPs in any province in Viet Nam. Some provinces, based on general policies on NTFPs issued by the government, have carried out preservation activities and developed NTFPs in line with their location conditions. However, currently a database of authorised bodies at the state level in charge of NTFPs management is not available in Viet Nam.

Current situation of NTFPs development

Presently, sufficient statistical data regarding NTFPs development is not available in Viet Nam. However, reports prepared by some provinces showed that:

- by 2005, approximately 30 out of 64 provinces had planted and harvested NTFPs, with a total area of 1,630,896 hectares, accounting for 13 per cent of existing forest area within the country.
- most types of cultivated NTFPs are concentrated in the Northeast, Northwest, North Central, Central coast, Western highlands and Southeast of Viet Nam.
- some provinces have planted large areas of NTFPs such as: Thanh Hoa (bamboo, rattan); Ha Tinh (rattan); Quang Binh, Nghe An and Quang Ninh (pine); and Lam Dong (bamboo, bamboo with long stems and large leaves). However, only six of the 30 provinces have NTFPs areas over 100,000 hectares (Thanh Hoa, Ha Tinh, Kon Tum, Lam Dong, Phu Yen, and Binh Thuan).
- in recent years, the planting of NTFPs has developed strongly, thanks to technical guidance from agricultural and forest expansion organisations, especially socio-economic development projects in mountainous areas. Many types of NTFPs species have been planted as part of these projects such as cinnamon and Truc Sao.

Many kinds of plants have been imported and planted in trial household gardens such as bastard cardamom, oppositifolium yam, codonopsis, and species of bamboo, etc. At present, some wood

oil plants in hill and forest gardens have brought positive about effects in terms of socio-economic and ecological impacts (cinnamon areas, anise areas, etc.). However, NTFPs planting is still conducted in a scattered manner, without adequate information on using and creating breeds and planting techniques.

Present status of NTFPs processing, trading and marketing

At present, the capacity for bamboo processing in Viet Nam is 250,000 tonnes per year, plus four bamboo board factories with a capacity of 4,000m3 per year, while the capacity for rattan processing stands at 100,000 tonnes per year. In recent years, bamboo and rattan manufacturing has developed into a sub-sector of forest production activities. However, though facilities and equipment are modern, the products are still simple and production is dependent on the market and available resources.

There are currently several factories in Viet Nam with processing equipment to producing good quality products for export, such as Binh Dinh and Quy Nhon. Bamboo and rattan-based products include bamboo screens, mats, tables, chairs, skiing sticks and boards. Paper manufacturers produce 340,000 tonnes of products per year, and the Forestry Cooperation has 11 forest-based enterprises.

In terms of other NTFPs, there are currently 115 state enterprises, 10 joint-stock companies, 36 limited companies and 170 private enterprises producing medicines, many of which are involved in exporting and importing medicinal plants and pharmaceutical products.

The country's five pine resin manufacturers have a capacity of 15,000 tonnes of resin per year. Some enterprises have also recently been developed that specialise in producing chemical products with natural origins and essential oils with botanical origins. Moreover, there are a wide range of processing and trading enterprises focused on NTFPs foods.

One of the most common characteristics of NTFPs-based enterprises is that they are small-scale, scattered and have a low capacity, while many state enterprises are larger and are very focused on particular products.

In terms of external markets, between 2000 and 2005, the export growth rate was not high, reaching an average of 17-27 per cent per year. The gross NTFPs export turnover in 2004 was almost $200 million, excluding products exported through the northern border, which have not yet been estimated. Some NTFPs exports have increased in volume but most traditional products have remained static. Knitted rattan products have an average growth rate of 31.25 per cent annually, and honey has a high growth rate, while cinnamon, anise and medicinal NTFPs have not increased significantly since 2000.

Viet Nam exports NTFPs to almost 90 countries, however, the development of the sector is scattered. Japan and Taiwan purchase the largest amount of Viet Namese NTFPs and are quite stable markets. NTFPs exports to the US have grown since 2001 and have great potential for expansion, however, exports to former Soviet Union markets have not returned to their previous levels.

Advantages, constraints, opportunities and challenges

Some advantages of the current NTFPs policy situation in Viet Nam include the fact that Viet Nam has signed many international protocols relating to forest conservation, including NTFPs. In addition, the government has issued policies on land and forest land allocation, creating favorable conditions for NTFPs development and conservation. Together with with these initiatives, policies have been developed to encourage the restoration of traditional handicraft villages using NTFPs, which have promoted the development of the private sector and attracted a considerable workforce to NTFPs planting and processing. It is fortunate that Viet Nam also has traditional markets in household items and handicrafts made from NTFPs.

While the advantages listed above provide a foundation for sustainable NTFPs management and use, there still exist many constraints to such development, including insufficient, unclear and incomplete policies, and a lack of incentives for organisations and communities to participate in NTFPs protection, production and trading activities. In addition, there is a perceived lack of harmonisation between NTFPs development and conservation regulations.

Opportunities exist in many forms. Viet Nam's current trend towards international integration creates nation-wide opportunities for export growth, as well as NTFPs plantations, rehabilitation and processing. Open policies that encourage export activities have provided opportunities to attract foreign investment to modernise NTFPs processing facilities and make the sector more competitive in a global marketplace.

However, it must be said that there are a great many challenges ahead for the development and conservation of NTFPs in Viet Nam, including the lack of information, weak implementation of laws, insufficient organisation and lack of well-trained staff in NTFPs production and marketing, as well as tough competition in the market. Other challenges include the lack of financial resources to develop methodologies, the deteriorating environment (including the loss of endangered NTFPs), and the lack of control over illegal trade in NTFPs. Furthermore, small NTFPs enterprises are not linked effectively to resource areas, while national markets for NTFPs products are scattered and unstable.

RECOMMENDATIONS FOR FUTURE NTFPS POLICIES

Some objectives for NTFPs policies should include the development of a complete policy system to enable local populations and communities to have access to, harvest, utilise and sustainably develop NTFPs, thereby contributing to poverty reduction in rural and mountainous areas. Ownership needs to be identified for forest owners, creating a better leasing environment for NTFPs production and trade. There should be transparent policies regulating transaction flows and NTFPs marketing, and research must be done on national and international NTFPs consumption. Finally, capacity building on NTFPs management at the national and provincial levels is another vital component for the sustainable development of NTFPs.

NTFPs policies must ensure that forest populations are benefiting from NTFPs, both in terms of income generation and forest protection. This must be the goal in order to harmonise the conservation and development of NTFPs, which should be community-based, according to each area's comparative advantages. Improved links between resource area development and forest enterprises and markets could also be beneficial to overall NTFPs development.

Main policies

Regarding NTFPs development and conservation planning, three main points need to be considered:

- First, the effective establishment, organisation, and management of national parks in conservation areas is of prime importance.
- Second, planning for NTFPs resource areas must be focused and production-oriented, and should link these areas with overall forest production development plans. This brings into play regional comparative advantages and encourages the production of specific products in each area, which suit market needs, while utilising resources in a sustainable manner.
- Finally, farming and breeding sites for export should be planned and developed to provide sustainable seed and seedling sources for expanding NTFPs export markets.

Land and forest allocation policies can benefit from extending the leasing and tendering of land for NTFPs production, and ensuring that leasers and tenderers utilise the land according to regulations. Another important step is encouraging the establishment of forest farms, including NTFPs

trees, through improving land conversion rights, land transfers, leasing, and capital sharing with equal land use rights. The allocation of forest land and granting of land use rights should be legalised for to local farmers and city dwellers who wish to invest in NTFPs planting in specified areas.

Some recommendations regarding policies on investment and credit include: allowing households, who contribute or buy shares in organisations that plant NTFPs trees, to borrow funds directly from banks; adjusting interest rates or providing a one-time refund after the production of a key product; and simplifying the loan process. In addition, the government should establish a fund to support NTFPs. There should also be a incentive policies to attract foreign direct investment to modernise forest-based enterprises. Cooperation between sectors and with international partners should be allowed and encouraged in order to improve production facilities and develop forest-based enterprises for export.

Policies on science and technology should consider that the suitability of a NTFPs species to a specific location is key to its production success. This suitability relates to both the forest production needs, as well as the needs of the local people. Key plants with rapidly rising economic value should be identified, and there should be standards developed for silviculture, products and marketing. Research on planting in protected forests should ensure both protection and production through forest rehabilitation, and forestry extension services to households and individuals should be fostered, providing a variety of training in NTFPs techniques. Lastly, investment in processing technology is required to improve the economic value of NTFPs and provide the sub-sector with a competitive edge, both nationally and internationally.

Market policies should encourage sectors at all levels to participate in the market and create a fair competitive environment that avoids monopolies. NTFPs areas and forest-based enterprises should be linked to encourage growers to sell their products directly without mediators. Joint businesses should be formed between producers, collectors, and traders of NTFPs. Furthermore, commercial promotion is vital, in order to seek out and extend NTFPs markets globally.

Regulations should be completed on harvesting, utilising and trading NTFPs, and simple and transparent guidance provided to key stakeholders. A common mechanism should be implemented for planting, breeding and artificially transplanting rare flora and fauna. Lastly, a benefits mechanism for forest and land users should be completed to encourage the development of protected forests.

Placing Conservation & Sustainability before Marketing - the Situation of NWFP Management in Bhutan

Marianne Meijboom[1]

BACKGROUND

Bhutan is a landlocked country in the Eastern Himalayas, which borders China in the north and India in the three other directions.

The country has a population of 635,000, of which 69.1 per cent live in rural areas (Office of the Census Commission, 2005). According to the poverty analysis report of 2004, on average, 31.7 per cent of the Bhutanese live under the poverty line, with a higher incidence in rural areas (38.3 per cent). Poverty is most marked in the east, where some 48.8 per cent of the population lives beneath the poverty line. The poor typically rely on subsistence farming, which provides limited income and employment opportunities.

Bhutan opened its doors to the rest of the world in 1961. Before then, it was a closed country and entirely dependent on subsistence production. Since 1961, Bhutan has undergone a major transformation and the development of health care, education, infrastructure, transport, communications, electricity and major progress in agriculture has linked Bhutan to the rest of the world. The impact of development progress is clearly visible in the life expectancy of the Bhutanese; in 1960 the average life expectancy was 35 years, by 1977 it had increased to 46.1 years and in 1999, average life expectancy in Bhutan had extended to 66.1 years (Royal Government of Bhutan, 1999). In 2003, Bhutan moved on the Human Development Index (HDI) from the category of 'Low' up to 'Medium' (HDI is 0.53; Royal Government of Bhutan, 2005).

Bhutan has a land area of 38,394 km2, which can be divided into three zones according to elevation: the Himalayas, the hills and the plains. Roughly, the Himalayas are located in the northern part of the country, the hills in the central region, and the plains in the south. Bhutan's topography is characterised by steep, precipitous slopes that descend rapidly into narrow river valleys. Some 45 per cent of the land area has an elevation of more than 3,000 m. Only 8 per cent of the country's area is suitable for agricultural production, with the largest area of the country categorised as forest land (72 per cent). Of this land, just 14 per cent is economically accessible. In Bhutan, 26 per cent of the land area is Protected Areas (National Parks and Wildlife Sanctuaries), 9 per cent is Biological Corridors, 8 per cent is Forest Management Units and 8 per cent of the land has potential for Community Forestry. More than one-third of the country's area is thus set aside for nature conservation. All forest land is classified as Reserved Forests. Bhutan has a rich biodiversity and for this reason has been declared one of the world's 10 most important biodiversity hotspots (Royal Government of Bhutan, 1999).

Bhutan is unique in the attention it gives to environmental conservation. Though the natural heritage is still largely intact, the Royal Government of Bhutan does not take its continued preservation for granted. Environmental conservation is not treated as a "sector" but rather as a set of concerns that are mainstreamed into the development of the country and are supported by the force of law (Royal Government of Bhutan, 1999). In the late 1980's, His Majesty King Jigme Singye Wangchuck propounded the Bhutanese concept of Gross National Happiness,

1 SNV Bhutan

which is the foundation for the nation's approach to development. The concept of Gross National Happiness is based on four pillars:

- Promotion of sustainable and equitable socio-economic development;
- Preservation and promotion of cultural values;
- Conservation of the natural environment; and
- Good governance.

The importance of the environment is further illuminated in the constitution of Bhutan, which states that 60 per cent of the land area will remain under forest cover for all time.

Bhutan's vast forest severely limits the amount of land suitable for agricultural production. With almost 70 per cent of its population living in rural areas, forest resources, including Non-Wood Forest Products (NWFP), form a major source of peoples' livelihoods. This is also reflected in the private sector. Employment in the private sector is mainly generated in the manufacturing sectors. In 2003, 17 per cent of registered enterprises were based on agricultural products, whereas some 46 per cent were forest-based (Tashi Wangyal, 2005).

The contribution of NWFPs to peoples' livelihoods and the potential for commercialisation has been widely acknowledged in Bhutan over the last decade. As a result, the Royal Government of Bhutan has identified the development of NWFPs as one of its major priorities in the 10th Five Year Plan 2008-2013, and has high-lighted the potential role of NWFPs in poverty alleviation.

NWFPs IN BHUTAN

According to the Forest and Nature Conservation Rules 2006, "NWFP shall mean: resin, varnish, katha, kutch, plants, flowers, seeds, bamboo, bulbs, roots, fruits, leaves, barks, grasses, creepers, reeds, orchids, cane, fungi, moss, herbs, medicinal plants, leaf-mould or other vegetative growth, whether alive or dead; wild animals (including fish), and parts or products of wild animals, including the skin, hide, feather, fur, horn, antler, tusk, bone, bile, musk, honey, wax and lac, insect; and boulders, stone, sand, gravel, rocks, peat and soil."

Bhutan is rich in NWFPs; to date more than 600 medicinal plants, 97 mushrooms, 97 fruits and nuts, 34 bamboos, 14 canes, 25 oil/resin species, 20 spices, 38 fibers, 70 ornamental plants, 181 fodder species, 36 dyes, 12 food crops (yams) and 77 forest vegetables have been identified and described (Forest Resources Development Division, 2006). The scientific names of many more NWFP species are still unknown.

FOREST POLICIES

Before 1969, access to forest resources in Bhutan could be described as "open access", in which all people were entitled to enter the forest and utilise products as desired. That said, in many areas, people self-regulated utilisation through traditional management systems that regulated the impact of harvesting on forest resources. The traditional systems were closely related to strong beliefs and respect for local deities (ladam/ridam). For example, under a traditional system, entry to the forest is restricted during several months of the Bhutanese lunar calendar in the belief that to do so would disturb the deities, which could in turn bring disaster to agricultural crops. The "open access" of the forest resources came to an end with the nationalisation of the forests as stipulated in the first "Bhutan Forest Act" in 1969.

After 1969, all forests were nationalised and people were no longer permitted to extract forest products freely. A system of permits and royalties was put in place in order to control and mitigate the negative impacts of forest extraction. According to the post-1969 procedures for the utilisation of forest resources for commercial purposes and rural timber supply, one has to request the Divisional Forest Officer at the district level for a permit. The Divisional Forest Officer assesses the request and forwards it to the Department of Forests in Thimphu. The Director General of the Department of Forests reviews and sanctions the request, and ascertains whether the amount of the species

requested for harvest can be sustainably extracted (the amount sanctioned could be less than that originally requested). The approved request is then sent back to the Divisional Forestry Officer. The Divisional Officer is then responsible for the allotment and the person who made the original request may then harvest the forest products. After harvesting, royalties are paid by the harvester, as instructed by the Forest Information Management Section, Department of Forests.

The Bhutan Forest Act of 1969 was revised several times thereafter and was eventually replaced by the Forest and Nature Conservation Act of Bhutan 1995. Under the act, the Ministry of Agriculture stipulates the requirement of a management plan prior to any commercial forestry activity, and provides rules for Social Forestry and Community Forestry.

Medicinal plants were banned for export purposes by the Director General of Forestry in 1988 (Subba, etc.).

The Forest and Nature Conservation Act of 1995, as mentioned above, has been further elaborated and refined a number of times. The latest Forest and Nature Conservation Rules 2006 provides a legal framework for the sustainable management of timber and NWFP resources. The rules reiterate that an approved management plan, including a resource availability assessment, is required before commercial utilisation of forest products can take place. With regards to Community Forestry, the rules state that a group of at least 10 households willing to establish, control, and manage a forest area (for wood or NWFPs) as a Community Forest, in accordance with a number of requirements, can form a Community Forest Management Group. The size of the Community Forestry area depends on the area available in and around the villages of the group, with a maximum of 2.5 ha per household. This size can be exceeded for the management of NWFPs, according to the availability of land. The Community Forestry Management Group is authorised to manage the community forest in accordance with a management plan approved by the Department of Forests.

In late 2006, a national workshop was held on the 'Development of NWFPs in Bhutan'. During this workshop, it was further decided that the development of NWFPs should be based on three guiding principles (FRDD, 2006):

1. Existing policy, legal and regulatory frameworks should form the basis for further development of NWFPs.
2. NWFP harvesting should be based on resource availability and sustainable management principles and not be market-driven.
3. Resource utilisation should be community based and not be based on individual efforts – i.e. the community should profit from the resources and not individuals only.

The difficult component of the implementation of the forest policies related to the management of NWFPs in Bhutan is the resource assessment, which is needed to gauge the availability of the products concerned and is a mandatory part of the required management plan. Forest (timber) inventories are not suitable for the assessment of NWFP resources because of the nature of NWFPs (different life forms, different parts of plants that are sometimes difficult to detect, seasonality, and scattered/and or clumped distribution). Therefore, inventory methodologies for NWFP resource assessments have to be developed per NWFP species separately in most cases (Wong, Thornber and Baker, 2001). It was only in late 2006 that the Department of Forests started working on the systematic development of guidelines for inventory methods and resource assessments for priority NWFPs. Currently, no formal guidelines have been released by the department and it will take time before these formal guidelines can be developed and put in place.

CURRENT STATUS OF NWFPs UTILISATION IN BHUTAN

NWFP utilisation for subsistence use and local marketing

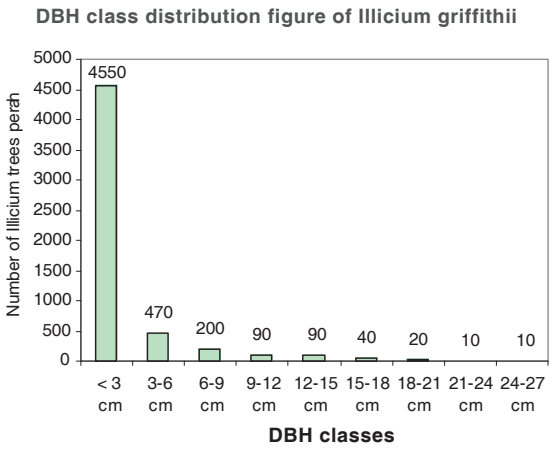
NWFPs are important for rural consumption and local marketing to support rural family incomes. At the subsistence level, NWFPs such as fern heads, wild asparagus, wild orchids, bamboo, cane shoots, betal leaves, herbs, thatching grasses, wild fruits, mushrooms, incense materials and spices are harvested and immediately consumed. Rural families also earn a large proportion of their cash income through collection and sale, mostly to the local markets or middle-men. Over 100 different NWFPs are sold in the weekend market in Thimphu such as cane shoots, fern heads, wild walnut, seeds of Zanthoxylum rehtsa, wild garlic, bamboo products, wild tea, several species of mushrooms and many others (Chandrasekharan, 2006). A study conducted on the role of bamboo in the Zhemgang district revealed that bamboo and cane products accounted for about 66 per cent of village household income (Moktan et al., 2004). According to the forest policies, no permits and management plans are needed for NWFP harvesting for the purpose of subsistence use, while a management plan, including a resource assessment, would be required for marketing purposes. However, the harvesting of NWFPs in small quantities for local markets is often tolerated by the Department of Forests without an approved management plan in place. There are only a few situations known where the utilisation of NWFPs for subsistence use and local marketing has led to depletion of resources; i.e. in the case of certain cane species.

NWFP utilisation for commercial purposes

In Bhutan, the strict and sometimes cumbersome regulations and procedures for harvesting forest products for commercial purposes have discouraged people from harvesting products. The manufacturing of incense provides a valid example. The incense industry uses more than 40 herbs and aromatic plants as ingredients for manufacturing incense sticks. Although 90 per cent of these species grow and are available in Bhutan, the industry obtains 80 per cent of them from India because of the cumbersome, time-consuming process for getting the permits and products in time and in the desired quantities, if at all, in Bhutan (Chimmi Pelmo, 2006; Tideman, 2006).

Another example concerns the harvesting of seedpods of *Illicium griffithii*, a species of star anise, by local people in Aja Nye (Mongar district). Requests for permits to harvest the seedpods have been made for several years, but have been rejected because of the lack of proper resource assessments. As a consequence, local people did not harvest and maintain the forest and many young and small trees are getting established in the area (see Figure 1), competing for sunlight and hampering productivity, which clearly illustrates the current under-utilisation of the seedpods. In order to increase the productivity, a thinning is now necessary to let the sunlight penetrate and encourage trees to produce seeds. At the moment, local people in Aja Nye are framing a management plan in order to obtain the legal right to utilise and manage the area.

Figure 1: Picture of Illicium griffithii forest and corresponding DBH class distribution figure.



NWFP utilization by the Institute of Traditional Medicine Services

The Institute of Traditional Medicine Services currently experiences no difficulty in obtaining permits for collection and is usually granted a permit within seven-to-10 days without an approved management plan (Tideman, 2006). This institute is responsible for the development and provision of quality traditional medicinal care and there are 25 Traditional Medicine Units attached to district hospitals within the country. In 2005, they procured 12.5 tonnes of raw materials, and this quantity is expected to double within the coming years because of commercialisation plans. The Institute of Traditional Medicine Services is therefore closely cooperating with the Ministry of Agriculture in the cultivation of medicinal plants and training of farmers in good collection practices to ensure the sustainable production of medicinal plant resources (Phurba Wangchuk, 2006).

NWFP utilisation for export

The most commercially important NWFPs for export in Bhutan include lemon grass oil (*Cymbopogun flexuosus*), Matsutake (*Tricholoma matsutake*; a high-value mushroom in Japan), and *Cordyceps sinensis*.

The lemon grass oil industry in Bhutan started in 1981, and is at present carefully managed by the Essential Oil Development Program of the Ministry of Trade and Industry in collaboration with the Renewable Natural Resource-Research Centre in Mongar, Eastern Bhutan. The oil fetches a good price in the United Kingdom ($12.5 per kilo) and provides an additional income to more than 1,000 people. The total lemon grass production from 1995 to 2004 amounted to 105,581kg with a value of more than $1.3 million (Dorji Wangdi and Galey Tenzin, 2006; Prommegger, et. al, 2005). The research centre in Mongar carefully monitors the availability of the wild lemon grass resources and is currently undertaking research on the impact of forest fire on resource availability. Unless the results of the research reveal otherwise, burning of lemon grass areas will continue to be strictly forbidden as a method of stimulating grass growth.

Exports of Matsutake mushrooms started in 1991, with a peak of 11,470kg in 1997. Since then, exports have declined to less than one-fifth (Ministry of Agriculture, 2003). In 2005, only 1,663kg of Matsutake mushrooms were exported to Japan (Hikojiro Katsuhisa, 2006). Other export markets include Singapore and

Malaysia. The sharp decline is mainly due to reduced market demands, and the lower quality of Bhutanese mushrooms because of quality loss during the long transport process. The National Mushroom Centre has developed rules to ensure the sustainable management of the Matsutake mushroom resources, which include start and end dates for the collection season, minimum size limits, and improved collection techniques (Dawa Penjor, 2006).

Cordyceps sinensis is called "Yar-tsa Guen-bub" in Dzongkhag which literally means "summer grass-winter worm" and can be found at altitudes of around 4,000 to 5,000m. asl. Cordyceps is a highly valuable product and one that and enjoys substantial international market demand (and a willingness by those markets to pay), with prices ranging from $2,000 to $5,000 per kilo. Until 2004, harvesting of Cordyceps was illegal, and therefore attracted many blackmarket collectors from across the border with China. Under the royal command of the Fourth King, the collection of Cordyceps was legalised in 2004 for a period of one month during the Cordyceps season based on careful studies (Namgyel 2003; Namgyel and Tshitila 2003). The Renewable Natural Resource Research Centre in Yusipang does extensive research on Cordyceps, including biological studies and studies related to sustainable harvesting and habitat preservation, and explores methods for cultivation (Kunzang Choden, 2006). In 2006, 507kg of Cordyceps was auctioned for a total value of just over $1 million.

Community-based management of NWFPs for domestic use and commercial purposes

According to the Social Forestry Division, at present four out of the 42 approved Community Forests focus on the management of NWFPs, including: the endemic bamboo species (*Borinda grossa*); lemon grass (*Cymbopogon flexuosus*); a pepper species used for medicinal purposes (*Piper pedicentilitum*); and bamboo and cane (scientific name unknown). At least nine other Community Forests are in the pipeline for the management of a number of NWFP species, including lemon grass (*Cymbopogon flexuosus*), *Illicium griffithii*, *Swertia chiryata*, *Cordyceps sinensis*, Matsutake mushroom (*Tricholoma matsutake*), bamboo (*Neomicrocalamus andropogonifolius*) and cane (*Calamus acenthospathus* and *Calamus altifolius*). All of the respective management plans contain a detailed resource assessment, and all consider both domestic use and commercial purposes.

Other factors influencing NWFP availability in Bhutan

The strict rules and regulations related to harvesting forest products for commercial purposes have strengthened the conservation and sustainable management of many NWFP species. However, it is not only strict regulations that have ensured continuous availability of forest products and NWFPs.

Where other Asian countries struggle to maintain their biodiversity, Bhutan has been able to conserve its rich natural resources. A number of reasons outside of forest policies can be attributed: the very recent "opening up" of the country to the rest of the trading world; the inaccessibility of the country due to its mountainous terrain and long walking distances; the relatively small population; the high respect for the law and its officials by local people; the relatively low incidence of corruption; and the strong influence of Buddhism, which includes a deep respect for nature and animals.

The following is an example to illustrate the strong influence of Buddhism. Dramitse, in Mongar district, eastern Bhutan, is an area famous for its vast lemon grass (*Cymbopogon flexuosus*) expanses. At present, the number of lemon grass distillers is dwindling. Among other reasons, this is due to the reluctance of local people in this religious area to produce lemon grass oil, which kills numerous insects in the distillation process (Dhanapati Dhungyel, pers. communication, 2007).

CONCLUSION

Bhutan's forest policies place conservation and sustainable management above all other considerations. Harvesting NWFPs for

commercial use is, in general, only permitted if an approved management plan is in place, which must include a scientific resource assessment. The implementation of resource assessments of NWFPs is complicated because traditional forestry inventory methods are not suitable. NWFPs also cover a wide array of products/species with different life forms, different parts of plants, different seasonality and different distribution patterns, and are sometimes difficult to detect. Therefore, inventory methodologies need to be developed separately for most NWFP species. At present, the Forest Resources Development Division is developing forest inventory methodologies for a number of species, however it will take some time before these inventories can be put in place and applied nation-wide. This has led to a situation where resources in high economic demand are still under-utilised. The focus on economic development and commercialisation of NWFPs, as stated in the 10th Five Year Plan 2008-2013, will further accelerate the pressure on the preparation of inventory and harvesting guidelines for NWFPs that permit local people to legally harvest NWFPs for livelihood improvement in a sustainable way.

In line with Bhutan's policies, a number of communities have formed Community Forestry Management Groups to manage NWFP resources for domestic and commercial purposes. The number of such Community Forests for NWFP management is increasing rapidly and shows good potential for livelihood improvement.

Furthermore, there are a number of NWFP species that are exported under the watchful eye of, and in close cooperation with, the Royal Government of Bhutan. These species, such as lemon grass, Matsutake mushrooms and Cordyceps are carefully monitored by Bhutan's research centres.

Bhutan is thus slowly and carefully opening up to the NWFP market and realises that the sustainable use of NWFP resources will lead to better conservation and improved livelihoods. Marketing opportunities for NWFP resources are likely to increase with the growing population, the increasing per capita income, and improved infrastructure. With strict forestry policies already in place and being implemented, the relative inaccessibility of the country due to its mountainous terrain, small population, high respect for the law and officials by local people, relatively low incidence of corruption and the strong influence of Buddhism, the future looks promising for Bhutan to be able to capitalise on its NWFP resources in a sustainable way.

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THEME 4:

MEDICINAL PLANTS

Community-based Enterprises and Market Development for Medicinal and Aromatic Plants (MAPs) in the Greater Himalayan Region

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BACKGROUND

Non-timber Tree and Forest Products (NTFPs) comprise a broad category of natural products and include a large group of medicinal and aromatic plants (MAPs). The Himalayan region is a treasure trove of MAPs and associated traditional and indigenous knowledge (Karki, 2004). Two global biodiversity hotspots - Indo-Burma and South Central China - are located in the Greater Himalayan region and contain a large number of endemic MAP resources. Local people, especially poor and ethnic minorities, derive a substantial portion of their income and products for their livelihoods and basic health care needs from medicinal plants (Karki, 2002). In the northern mountains of Nepal, up to 50 per cent of the household income is derived from the harvest and sale of high-value MAPs such as Jatamansi (*Nardostachys grandiflora*), Kutki (*Neopicrorhiza scrophulariiflora*), Yartsagumba (*Cordyceps sinensis*), Chirata (*Swertia chirayita*), etc. (Karki, 2000).

Herbal products originally used for home remedies, subsistence purposes and small-scale trading by rural communities are now in high demand from industry and external trade. Studies show that certain MAP species or groups of species are being over-exploited, leading to extinction. Conservative estimates put the monetary value of MAP-related global trade at around $63 billion, which is estimated to grow at the rate of 7 per cent per annum (Nagpal & Karki, 2004).

NTFPs are an integral source of livelihoods, providing food, medicine, dyes, tannins, gum, construction materials, etc., and source of cash income for poor and landless communities in the mountain regions. NTFPs have been recognised widely as a source of significant livelihood value, especially for poor rural people, as they provide cash income, local medicines, supplementary food and other products required daily. NTFPs of the Greater Himalayas are drawing increased attention from both development planners and environmentalists due to their multiple functions and potential contributions in improving the livelihoods of rural communities (Rawat and Uniyal, 2005).

The International Centre for Integrated Mountain Development (ICIMOD) has found that subsistence agriculture is increasingly becoming unsustainable, both economically and environmentally. However, niche products can serve as a basis for diversifying the incomes of mountain communities. NTFPs have been identified by various agencies as one of the sub-sectors with the potential to generate additional local income and employment opportunities through participatory approaches in remote mountain regions.

REGIONAL TRADE SCENARIO

India is the centre of South Asia's export trade in medicinal plants, and it is estimated that the collection and processing of medicinal plants

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contribute to at least 35 million person days of employment per year. Currently, 960 species are traded in India with a total consumption of 312,516 tonnes, including 123 species with a demand of more than 100 tonnes per year (GOI, 2001).

In Bangladesh, it is estimated that around 12,000 tonnes of dried medicinal plants worth around $4.5 million are sold from the rural collection and production areas that contribute significantly to the rural economy (SEDF/IC, 2003). The annual import of MAPs to Bangladesh has been estimated at Tk 500 million (Non Wood News, 2007).

In Nepal, an estimated 20,000 tonnes of MAPs worth $18-20 million are traded annually and about 90 per cent of this collection is exported mainly to India in raw form. Some 20 high-demand and high-value products constitute about 80 per cent of the volume and value in trade (Bhattarai and Olsen, 2000).

In Pakistan, dried medicinal plant material worth $30 million per year is used in the country, while a substantial quantity of crude plant drugs and their derivatives are exported to developed countries.

The scenario of MAPs in Bhutan is not very different from that of other countries of the region. About 300 species are harvested from the wild and the cultivation of a few selected species has only been initiated very recently. However, medicinal plant farmers have been highly encouraged to supply medicinal plants to the traditional medicine manufacturing units of the government. Therefore, a significant proportion of the cultivated products are used domestically for the preparation of traditional herbal medicines, while the majority is exported in crude forms.

In China, 8.5 million tonnes of MAP resources are used every year, which are mainly collected/ harvested from the wild. There are also records of significant trade of MAPs from Afghanistan and Myanmar.

ISSUES IN COMMERCIALIZING MAPS IN THE HIMALAYAN REGION

The increasing use of MAPs in natural products, health foods, cosmetics and nutraceuticals has implications on the sustainability of resources and pro-poor MAP-based livelihoods. In the Himalayan region, 90 per cent of medicinal plants are extracted from the wild, which often involves destructive harvesting. Most of the collected plants are exported in raw form with very little processing in their area of origin. Producers and collectors are often disorganised and have poor access to technology, credit and market information, and have critical disadvantages in terms of quality control and bargaining power. The marketing system is disorganised and secretive. In such a scenario, poor collectors in remote regions receive a meager share of the final value of the products they harvest. On average, this share of the final price paid by the consumer is as low as 10 per cent (Karki et al., 2003). Although the cultivation of MAPs has been proposed as a viable option to diversify farming practices, forward and backward linkages are yet to be adequately developed, and studies of the impacts on the landless to date are inadequate.

THE MEDICINAL AND AROMATIC PLANTS PROGRAMME IN ASIA (MAPPA)

MAPPA is a programme comprising strategic research, collaboration and networking on MAPs. It develops, provides and promotes appropriate options, methods, strategies and technologies and other sustainable solutions to provide direct benefit to poor and marginalised people and help conserve critical medicinal plant-related biodiversity wealth for use by future generations.

The emphasis of the program has been on action research that has the potential to benefit the rural poor and indigenous communities. MAPPA network projects aim to influence policy-making in the areas of biodiversity conservation, sustainable livelihoods and improved primary health, using the MAP sub-sector as the model. The programme works closely with national governments and has facilitated policy and institutional reforms and evolutions specifically targeted in MAP areas in the Hindu Kush Himalayan and South Asian regions.

MAPPA covers three principal themes:

- Conservation of biodiversity through sustainable use;
- Expansion of livelihood opportunities through equitable commercialisation; and
- Safe and efficacious traditional medicine system for primary health care.

With respect to the theme "expansion of livelihood opportunities through equitable commercialisation", ICIMOD-MAPPA has found that if people can benefit financially from enterprises that depend on forests and other natural habitats, they will take action to conserve and sustainably use them.

The objective of this paper is to highlight the efforts of ICIMOD-MAPPA in promoting NTFPs/MAP commercialisation through community-based enterprises (CBE) for promoting local value addition for species in trade, as well as to provide incentives to conserve resources in Chhattisgarh, India and establish cooperatives and endowment funds in West Nepal.

STRATEGIES FOR MAPS-BASED PRO-POOR LIVELIHOOD OPPORTUNITIES

Supply chain management of MAPs

MAPPA focuses on the supply chain management (SCM) of MAPs as an imperative in developing the MAP sub-sector to meet the objectives of conservation, quality production and accessing regional and international markets. The development of CBEs and efficient supply chains under MAPPA is being done in a strategic manner by keeping in mind the current operating nature and structure of the sector, and acquiring specific knowledge of the institutional capacities, modes of operation, and internal linkages found in the domestic and regional MAP sectors.

Understanding the constraints to growth, including existing market information and infrastructure, linkages, market arrangements and access, and the level of services provided to the poor, enable the development of sustainable and need-based solutions. MAPPA/ICIMOD follows a knowledge-based approach in developing integrated and transparent supply chain arrangements.

CBEs – A viable option for pro-poor growth

The basic concept of the CBE structure is to organise the collectors/producers into a common platform to produce and market value-added products and elevate them from subsistence to value-added resource management. This is important in the context of MAPs, as they are used in a diverse range of products that require different storing, processing and quality control techniques.

Appropriate CBE structures ensure that producers receive dependable and immediate cash returns for their produce, promote local value addition, and share the profits generated by the business with relevant stakeholders. These activities remove some of the chronic problems like disorganised and secretive supply channels, high-volume and low-return distress sales, and illegal harvesting. In addition to developing long-term relationships with buyers, well organised producer enterprises improve the supply of quality raw materials and also command better prices for their produce.

CBEs are formed from within decentralised resource management groups like joint forest management (JFM) in India and community forestry (CF) in Nepal. As part of the process, primary and secondary MAPs collection and dispatch centres are developed in rural areas as CBEs.

Quality control

In order to balance collection with cultivation of endangered MAPs, quality planting materials are being produced and multiplied in state-of-the-art nurseries. The project partners and community groups have been trained and familiarised with various types of good practices and international guidelines, especially the WHO Good Agriculture and Field Collection Practices (GAFCP), organic production etc. The key factors in quality control, especially in minimising microbial contamination, comprise post-harvest handling, adequate

labeling protocols and ensuring the right storage conditions are met for quality maintenance. These are of critical concern to the production process and are continuously disseminated to the growers and MAP collectors, and compliance monitored. Chains of custody cards have been developed and distributed to members of 357 households covering five villages in Chhattisgarh, India.

Marketing of MAP products – experiences from India

In Chhattisgarh, India, the MAPPA project, being implemented by the Chhattisgarh Minor Forest Products Federation (CGMFPF), identified 11 species after detailed surveys were conducted on organic collection, processing, value addition and marketing. The various components leading to CBE development, value addition, and marketing are highlighted below.

Institutional mechanism for local value addition

In Chhatisgarh, the restructuring of adequate marketing facilities has safeguarded the interests of poor collectors and producers. This has been done by setting up self-help groups (SHGs) from within the forest protection committee (FPC) members, which comprise of both males and females managing MAPs processing centres. In order to generate a revolving fund, each member deposits Rs 10/month into the SHG funds. Workers in the processing centres are paid on the basis of the quantity of raw materials processed per day.

Value addition through appropriate technology

The project further prioritised five species out of the initial 11, namely Tikhur (*Curcuma angustifolia*), Baichandi (*Dioscorea hispida*), Satawar (*Asparagus racemosus*), Amla (*Phyllanthus emblica*) and honey, which were being processed by very crude methods and mostly under unhygienic conditions.

For the processing of Tikhur powder, mechanical and motorised grinders were introduced to replace the stone-grinding practices and make the grinding process more user-friendly and hygienic. Amla is being processed in good quality vessels and boiling and drying is conducted under strict hygienic conditions. Improved machines have been introduced to make Baichandi chips and people are using them with great enthusiasm. These machines produce clean and uniform-sized chips, which are more accepted in the target markets.

After processing, three quintals of Tikhur powder, five quintals of Baichandi chips and 60 quintals of Amla have been sold for Rs.30000 ($681), Rs.10,000 ($228) and Rs.150,000 ($3,400), respectively, in 2005.

More than 100 Kamar tribe families earn their livelihoods from collecting honey from the project area. The earlier crude and unhygienic methods have been replaced with improved collection methods, and the participants now sell honey to a small processing plant established by the project at Sankara town. To date, 500kg of honey has been collected and sold under a brand for Rs 24,000 ($545).

Forty hectares of lemon grass have been planted and a distillation unit has been established. Plates out of the leaves of *Bauhinia vahlii* are being manufactured by women's groups and sold in local markets at Raipur, the capital city of the state. Income generated from these products goes to the participating FPCs.

Proper and hygienic collection, drying, grading and storage of selected MAPs has increased the incomes of producer groups in the project area. Kalmegh (*Andrographis paniculata*), Dhwaiphool (*Woodfordia fruticosa*), Nagarmotha (*Cyperus scariosus*), Amla (*Phyllanthus emblica*) and Baibidung (*Embelia ribes*) in project area have yielded much better prices for collectors than before the project intervention. MAPPA intervention has shown an increasing price trend, which is detailed in the table.

Retailing of branded MAP products

The project has integrated the value chain for the

Name of species	Price before Project Intervention (INRs/kg)*	Price after Project Intervention (INRs/kg)	Increase in Percentage (%)
Andrographis paniculata	1.50-2.50	3.00-5.00	100
Woodfordia fruticosa	1.00-1.50	3.00-5.00	300
Cyperus scariosus	3.00	5.00	66
Embelia ribes	20.00	30.00-40.00	50-100
Phyllanthus emblica	10.00-15.00	20.00-25.00	100-166

**(1USD=42 INRs)*

development of MAP products in the project area. In order to take the products to the consumers, a herbal retail outlet called SANJEEVANI has been established in Raipur, the capital city of the state, with branches in other districts. SANJEEVANI buys the finished products from the community-managed processing centres.

The project is also facilitating the manufacturing of 19 different types of traditional medicines based on traditional knowledge and the prevalent diseases in the project area. These medicines are also sold through SANJEEVANI outlets as over-the-counter drugs and have been very well received by the market. All profits from the sale of MAP-based products contribute to the FPCs financial accounts.

Mainstreaming MAPs marketing

The project has also developed markets for MAP-based products beyond the state. Proper collection, storage, drying, processing and value addition have encouraged better prices and acceptance of MAPs in the project areas. The competitive rates offered by the project to collectors have not only developed a marketing system within the project area, but have also created a system of competition between traditional traders and middlemen, who normally exploited collectors by offering low prices. This has directly contributed to improving MAPs collectors' incomes by more than 100 per cent.

Innovations in MAP institution building and finance in Nepal

The Federation of Community Forestry Users Nepal (FECOFUN) is one of the country's leading institutions in community-based natural resource management. Functioning as a network of community forest users, presently FECOFUN covers 74 of the 75 districts of Nepal and involves 11 million people through 14,300 forest users groups. It directly manages over 1.3 million hectares of community forests in the country and generates additional benefits by producing an average revenue of Rs. 914 million (approximately $22 million) per year.

MAPPA is working with district FECOFUN and community forest user groups (CFUGs) in the Baitadi and Darchula districts of West Nepal. The main activities of the project in West Nepal have been the development of MAP cooperatives with local traders and the establishment of a capitalisation fund to benefit the collectors and traders.

Marketing information

Members of the CFUGs in the project area have been trained in various aspects of markets and marketing, including major herbal market studies and agricultural/herbal trade fairs in Nepal and India.

The district-level Project Coordination Committee is represented by the district-level herbal traders, in addition to other stakeholders. A mechanism has been developed for the district FECOFUN to obtain market prices and other herb trade-related information from various sources, which is then disseminated to the village-level stakeholders and community groups, including CFUG members. Local traders have provided market information and guidelines on primary processing and provided guidance on how to buy MAPs from community managed cooperatives.

Marketing cooperatives

With strong components of community-based research, capacity building and exposure, communities in remote regions are gaining from collective action in maximising the benefits gained from community forestry. Marketing cooperatives with endowment funds have been set up in Baitadi and Darchula districts in the far western region of Nepal for mainstreaming the collection and marketing of MAPs, which are backed by the development of collection and dispatch centres. The cooperatives have also been providing micro-credit to primary collectors and producers, and created a business platform for value addition and marketing. More than 200 tonnes of NTFPs/MAPs worth NRs 1.55 million was collected/produced in the two project districts during 2005. Simple interventions have resulted in a 50-per cent increase in the price of products at the local level. As the result, community members, especially women's groups, have initiated group farming efforts on some commercial MAPs in degraded community forest and land. The number of women practicing MAP cultivation in home gardens and farms is also increasing considerably.

Capitalisation fund

Capitalization funds worth NRS 80,000 were provided to 18 CFUGs to provide necessary credit and financial support to participate in MAP-based programmes. The funds were used to provide loans to individual members and self-help groups to initiate cultivation of MAPs and establish micro enterprises. A total of 206 males and 174 females were offered loans between NRs 500 to NRs 4000 in the two districts. In Baitadi, members from three CFUGs produced 1,538kgs of NTFPs and earned NRs 36,983. In Darchula, four CFUGs earned NRs 52,000 from interest paid by the repayment of loans. With the above interventions over the last five years, the CFUGs in Baitadi and Darchula produced 500 tonnes of NTFPs and MAPs worth NRS 4.558 million.

Gender and social inclusion

Out of the total beneficiaries in the project in Nepal, 53 per cent are male and remaining 47 per cent female, while 19 per cent of the male members and 14 per cent of the female members are dalits (socially backward castes). In total, 2,576 male and 1,683 female members constitute the 4,159 MAP collectors/producers in the project districts.

A comparative study between 2005 and 2006 revealed that the male producers increased by 17 per cent (from 1,186 in 2005 to 1,390 in 2006), while the female producers increased by 22 per cent (from 725 in 2005 to 888 in 2006). Dalit producers have also increased by 3 per cent during this period.

Through such figures it can be realised that the project's focus on including poor people, dalit and women in capacity building and income enhancement has been effective. In terms of income, aggregated household incomes grew from Nrs 4,227 in 2005 to NRs 5800 in 2006. Gender disaggregated data will be developed at the end of the project.

LESSONS LEARNED

The MAPPA pilot projects have demonstrated the use of sustainable marketing mechanisms that benefit local collectors by up to 100 per cent in comparison to the pre-project intervention stage. Basic principles on good harvesting practices and value addition, including the semi-processing and processing of raw materials, have to be followed. The required knowledge for these techniques needs to be provided to primary collectors and

producers through appropriate stakeholders, as well as through the documentation of useful knowledge and practices in the field of production, processing and marketing.

While developing CBEs for livelihoods, an understanding of markets plays a significant role in ensuring success. Lessons learned from the projects suggest that CBE models should be based on integrating value chains to reach the end consumer through a multi-stakeholder approach or by linking enterprises to the value chains of larger enterprises. Community mobilisation and capacity building is important to ensure compliance with standards and protocols. It has been observed that certification is extremely important for export markets, but it is not an end in itself. While certification is often expensive for CBEs, local group certification bodies, whose standards are harmonised with national standards (organic products, GMP, etc.), can provide a good base to start from.

FUTURE PLANS

Based on the lessons learned, ICIMOD-MAPPA is promoting CBEs that produce quality products in demand by the private sector. These enterprises have to be formed in clusters and will be linked to centralised common facility centres to produce consumer products and provide support services. Value addition at every stage is proposed to ensure enhanced bargaining power for growers and collectors, and better returns. It is envisaged that Public Private Partnerships (PPPs) will be developed to ensure mainstreamed production processes, adequate marketing infrastructure, and increased investment in the sector through better quality and enhanced brand awareness of MAPs products. The entire process is aimed at ensuring the conservation and sustainable utilisation of MAPs resources through MAP enterprise promotion in Bangladesh, Bhutan and Nepal, towards the further expanding of the initiative in the Greater Himalayan region to address the livelihoods problems of poor communities.

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Formulating a Model for Developing Medicinal Plants in Allocated Forest with the Participation of Local Community in the Buffer Zone of Bach Ma National Park

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BACKGROUND

More than 50 per cent of Thua Thien Hue's natural area comprises mountainous terrain, which is directly affected by the monsoon season. Thanks to the area's complex topography and climate, Thua Thien Hue has a diverse and unique range of fauna and flora, including various species of valuable trees and special forest products such as medicinal plants. However, local communities are currently harvesting medicinal plants from the forest without considering the need to address such practices in a sustainable manner.

Changes in government policies at the national level regarding the exploitation of forests have had both negative and positive impacts on forest resources in Thua Thien Hue. Among the policies that have affected local forest resources in recent years, the decentralisation of forestry authority has had profound impacts, particularly in terms of the exploitation of timber. In light of such changes, new sources of income, such as Non-Timber Forest Products (NTFPs), need to be identified for local people living near or in forests, of which medicinal plants are considered a viable and potentially efficient alternative.

Ha An village is located in Huong Phu commune, Nam Dong district, Thua Thien Hue province, and lies in the buffer zone of Bach Ma National Park. It was chosen by the Forestry Faculty of the Hue University of Agriculture and Forestry as a long term study site for faculty students to explore ways to help local people to increase their income from forest and forest land without losing or degrading forest resources.

Following a preliminary survey, it was found that local residents were concerned about developing medicinal plants at the household level due to fears about their products being accepted in the market. It was then agreed that research was urgently required to identify comprehensive solutions for developing an effective model for cultivating medicinal plants in allocated forests. This research identified a promising new direction for solving many of the difficult problems currently facing the forestry industry. The experimental models formulated through the research provide good examples for individuals, organisations and regions to learn from our experiences and apply the models, in order to achieve sustainable development in the area, as well as build up green corridors for the conservation of Bach Ma National Park.

RESEARCH GOALS AND OBJECTIVES

General objectives

The development of medicinal plant resources in allocated forest land in the area aims to help local people improve their use of forest and forest land through diversifying the NTFPs products they produce. Through such an initiative, the production ability of forest areas would also be increased, local people's incomes improved and pressure reduced on forest resources, leading to substantial improvements in the overall management and development of forest resources in the buffer zone of Bach Ma National Park.

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Concrete objectives

- Establish models for medicinal plant cultivation at the household level in allocated forest, which produce good, high-quality fast yields, involve simple techniques and low inputs, and meet the long-term demands of the market.
- Compile a collection of the medicinal plant genes in the area in order to provide a good resource for forestry, natural resource management and pharmaceutical students from universities in thua thien hue province.
- Increase the capacity of forestry staff and local people in identifying and developing medicinal plant resources, as well as raise awareness about the value of medicinal plants in the buffer zone of bach ma national park.
- Establish fixed propagation techniques for some of the major medicinal plant models, and develop a proposal to expand these models into areas in the buffer zone of bach ma national park.

RESEARCH METHODOLOGIES

Background research

- Review literature on NTFPs and medicinal plants from the world, region and Viet Nam, especially concerning the buffer zone of Bach Ma National Park
- Study documents on the natural, social and economic conditions of the research area
- Examine reports of forestry programmes and development projects in the area

Specimen survey

- Conduct surveys of transects and standard plots in the field to identify the practical conditions required to group the targeted objects
- Identify the species and volume of medicinal plants in the study area

Social surveys

- Rapid rural assessment (rra) tools such as historical surveys, transect studies and village inventories were used to collect information about the land and forest, check the household conditions of those who participate in the model development, and choose the location for implementing the models
- Participatory rural assessment (pra) methods such as using boards, questionnaires and group discussions were used to survey the market, choose plant species, identify nursery and tending techniques, and select harvesting and processing procedures
- Participatory research (pr) and participatory technique development (PTD) were used in designing, implementing, monitoring, evaluating and communicating the models

RESEARCH RESULTS AND DISCUSSION

Current status of medicinal plants in study area

Through the preliminary survey, the study team identified 130 common medicinal plant species distributed in the study area, belonging to 59 flora families. Of the total, 30 medicinal plant species were associated with their scientific names. The Euphorbiaceae family had the highest number (10 species), followed by the Rubiaceae family (nine species), the Araliaceae family (eight species), and the Fabaceae family (eight species), while various other families had between one-to-five species. Thus, the composition of medicinal plant species in the study site was found to be diverse, providing a good seed base for developing medicinal plant models in the area.

However, some species, such as Ba kich, La khoi, Kim tuyen and Binh voi, were found to be on the verge of extinction due to over-harvesting and the degraded local ecosystem. It is therefore urgently required that methods are developed to conserve and develop these species before they vanish altogether.

Low-yield medicinal plant species made up the highest number of species surveyed (47 species, representing 36.15 per cent of the total surveyed), followed by average-yield medicinal plants (31

species, occupying 23.85 per cent). There were 29 species of rare medicinal plants (representing 22.31 per cent of total), while common medicinal plant species had the lowest proportion at 23 species (17.69 per cent). Keeping these figures in mind, seeds and seedlings should be provided for models on a flexible basis, with rare species only being developed conservatively in order to ensure natural seed stocks are not depleted. For this reason, it is recommended that large amounts of seeds or valuable species be purchased from properly equipped centres.

Following further research, it was found that despite the diversity of medicinal plants in the area, local people only knew how to use 62 of the total 130 species identified (47.69 per cent). This proved that local people lacked knowledge, as well as experience, in utilizing the valuable medicinal plant species that grew naturally in their area. Of the 62 medicinal plant species exploited by local people, only 14 were commonly used (22.58 per cent). These were plants mainly used to create water infusions such as Chan chim, Che vang, Ngay, Buom bac, Tho phuc linh, Kim cang, and Mam nem. Commonly planted species in the home garden included Sa, Gung, Nghe den, Nghe vang, and San day. Species used on average comprised 14 species (22.58 per cent), with 22 species used sporadically (35.48 per cent). Rarely used species made up 12 of the total (19.35 per cent).

Classification of medicinal plants

Of all medicinal plants identified, the most abundant group was the standing herb (27 species, representing 20.77 per cent); followed by bush tree (25 species, representing 19.23 per cent); small tree (23 species, representing 17.69 per cent); average tree (20 species, representing 15.38 per cent); and finally the small or bush tree (two species, representing 1.54 per cent).

Local people mainly use standing herb (15 species), climbing herb (14 species) and bush tree (14 species) NTFPs. Small and average tree groups comprised large numbers of species but were not used very much by local people (four small tree species and six average tree species). This means that local people only concentrate on harvesting trees distributed in the lower canopy of the forest, without greatly affecting the upper forest canopy. Nevertheless, harvesting large amounts of these plants will affect the forest's biodiversity. Thus, the sustainable conservation and development of these resources will not only improve access to available resources for disease treatment, but also provide more products for markets, scientific research and ecotourism.

Traditional experiences on harvesting and utilising medicinal plants in the study area

Research found that the overwhelming majority of medicinal plant species are harvested from the natural forest (52 species out of 62 species harvested by local people, representing 83.87 per cent), while only one medicinal plant species was harvested from plantation forests (1.61 per cent). The number of medicinal plant species harvested from home gardens comprised groups of species planted by local people such as Dinh lang, Gac, Sa, Nghe den, Nghe vang, and San day. Most of the households tend not to harvest medicinal plant species in large amounts, but instead only harvest the plants when needed.

In the natural forest, some medicinal plant species, such as Buom Bac, Chac Chiu, Ngay, and Chan Chim, are abundant and have strong regeneration abilities, as local people conduct clear-cutting and leave the stumps for regeneration. However, the harvesting techniques used in the local community depend on the distribution of species.

Ailments that can be effectively treated by local medicinal plants are diverse and include six groups of diseases. The largest number of species is used to treat stomach aches and digestive complaints (31 out of 62 species, representing 50 per cent), while the other disease groups can be treated by between 20 and 24 species. Local people also use these traditional medicinal plants to improve general health and increase the body's immunity system, as well as treat diseases in livestock.

Most of the traditional medicinal plants species in the area are harvested for home use and only a small proportion is sold. Processing generally consists of drying the plants, which are then used by different groups of people in the community.

Role of medicinal plants in household income

In order to understand the roles of medicinal plants in households in the study area, 48 households were interviewed, which were spilt into the following categories: rich households Group I; wealthy households Group II; average households Group III; and poor households Group IV.

According to the survey, Group I's income from medicinal plants stands at VND2,000,000, per year, which is very low compared to the total income of the household (0.54 per cent). In general, these kind of households only plant monotonous species for household use, and rarely for sale; thus the income from this source is very low.

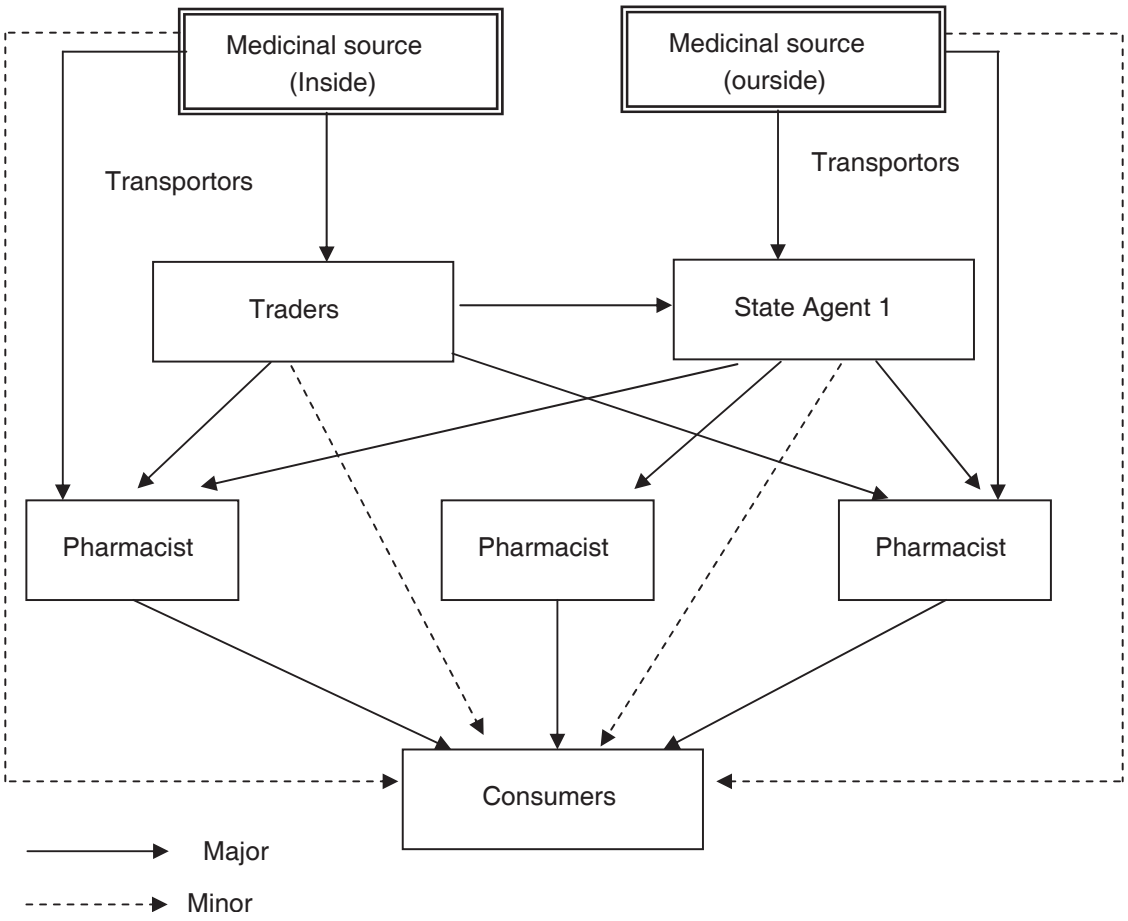
Group II uses more medicinal plants than Group I, mostly for water-based infusions, but also earns a greater percentage of its income from the plants (1.85 per cent, second-highest of all groups). It is important to recognise that the value of medicinal plants to these types of households is not only expressed by the amount of money earned, but also by the degree to which they are used in the daily lives of local people.

Households in Group III lead a lifestyle dependent on cultivation and grazing in hilly areas, and but also earns additional income from harvesting medicinal plants (VND1,550,000, representing 1.33 per cent of total income).

Group IV mainly uses medicinal plants for household use, but also sells some products (3.9 per cent of total yearly income). The method involves clear harvesting, drying the plants in the sun, packaging, and selling the product in 25-kg packages for VND50,000. Group IV's ratio of income from cultivation stands at 30.83 per cent, while grazing and hired labour generates 65.28 per cent of yearly household income. The market channel for medicinal plants in Thua Thien Hue

According to interviewees, sources for medicinal plants within the province are unstable, and are heavily dependent on the season and providers. Medicinal plants harvested in Thua Thien Hue are much more available in the dry season, therefore pharmacists have to buy from outside the province in the wet season. Moreover, local people only harvest for immediate use or primary processing and do not pay attention to the demands of the market. Thus, in order to develop a stronger and more effective market for medicinal plants, training is required for local people to process and store common and valuable medicinal plants.

Figure 1. Medicinal plant consumption in Thua Thien Hue



Types of medicinal plants consumed in Thua Thien Hue

The survey of medicinal plants consumed in Thua Thien Hue was based on 53 questionnaires conducted throughout the area. It identified 95 consumed species, highlighting the diverse nature of the medicinal plant market. However, the amount of each species consumed varied greatly and depended on the medical properties of medicinal plant.

Based on the amount consumed, the medicinal plants species were divided into the following five groups:

- Group I: 1,000-5,000 kg/year consumed, including 15 species;
- Group II: from 500 to less than 1,000 kg/year consumed, including 12 species;
- Group III: from 200 to less than 500 kg/year consumed, including 23 species;
- Group IV: from 100 to less than 200 kg/year consumed, including 18 species; and
- Group V: under 100 kg/year consumed, including 27 species.

Most of the medicinal plants surveyed are present naturally in the study area and Thua Thien Hue province, especially in natural forest environments. This proves the huge potential of medicinal plants in Thua Thien Hue to not only meet the demands of the province, but also act as a valuable product for export to other provinces and markets.

However, in order to transform medicinal plants in Thua Thien Hue into valuable, high-income earning goods in the market, a comprehensive market development strategy must be developed.

Developing a medicinal plant model

Based on the set criteria, and together with the local people, the research team chose 20 households to participate in developing medicinal plant models comprising: shaded fruit tree garden; hilly garden; five households under plantation forest model; and three households under the natural forest model.

The medicinal plants used in the models included:

- Home garden model: nghe vang, kim ngan, nhan tran, gung, sa, nghe den, kim tien thao, san day, cho đe, tia to, ich mau, coi xay, mo long, co hoi, rau meo, ke đau ngua, lo hoi, ngai cuu, rieng, bo chinh sam, bo cong anh;
- Plantation forest model: nghe vang, tho phuc linh, kim ngan, khoai mai, gung, bong bong, nghe den, lac tien, kim tien thao, y di, cho de, coi xay, rau meo, lo hoi, ha thu o đo, ba kich, bo cong anh, la khoi; and
- Natural forest model: tho phuc linh, khuc khac, kim cang, thien nien kien, sa nhan, thach xuong bo, ha thu o đo, binh voi, la khoi, nghe vang, nghe den, khoai mai, Bong bong, Mia gio, Gung, Bo chinh sam, Cau tich, Buom bac, Chac chiu, Ngay.

Technical solutions were selected based on the suitable habitats (home garden, hilly garden, plantation forest and natural forest) for each species and on the experiences of local people integrated with modern techniques.

Local people fully participated in training workshops, and actively contributed ideas for improving the harvesting, planting and sowing techniques for the medicinal plants. The participants absorbed new knowledge quickly, as most of them could base it on their own experiences, and some had already participated in other projects in the area.

Through the research project, descriptions for identifying species and a guide to sowing, planting, tending, harvesting and processing 29 common, high-value medicinal plants was developed and distributed in the study area.

Living and growth ratio of species

- Home garden model: the model of planting medicinal plants in fruit tree gardens and hilly tree areas generated some income for local people. for wealthy and experienced households, approximately one hectare of a home or hilly garden can produce vnd7-8 million from medicinal plants planted with fruit trees such as lemons and oranges. however, the development of the model encountered difficulties after harvesting because local people did not receive support from outside, and actually did not consider the development of medicinal plants as an economical activity.
- Plantation forest model: a total of 11 species grew in an average density level of 1,100 plants per hectare. the growth of supplementary species occurred under the average level of perennial species such as ba kich, do bau, buom bac and sam bong because they are affected by the shading at the acacia plantation or excessive light at the rubber plantation. in the first year, annual species such as sa, san day and gung had good growth because they were planted in the open canopy and suited the conditions of the plantation.
- Natural forest model: similar to the plantation forest model, the density and number of species planted under natural forest fulfilled the demands of the project design, despite having to change some species due to a lack of seeds/seedlings. Some annual species were planted on the forest

edges such as Nghe den, Nghe vang, Gung, Sa and San day, and have been harvested. San day was replanted but destroyed by a storm. Other species such as Ba kich, Do bau, Sam bong, Buom bac and Chan chim died in large numbers because of damage from falling debris from the upper canopy of the natural forest. These species grew at an average level, except for annual species such as Sa and Nghe den, or well-tended species as San day.

LESSONS LEARNT

From the result of the medicinal plants models under plantation and natural forests, the following lessons can be identified:

- Because ba kich plants were transported from quang ninh, they did not suit study area, leading to a high death ratio. the species needed more time to adapt to the local climate and conditions before being expanded on a large scale. this species grows best under the natural forest and does not seem suited to conditions in the plantation forest (too much shade under the closed canopy of the acacia plantation and or too much light under the open canopy of the rubber plantation). proper shading techniques are required for this species if it is planted in rubber plantations.
- The perennial species should be planted under the natural forest to ensure its light and nutritional demands are met, which leads to better quality medicinal properties in the final product.
- Due to their great demand for light, annual species such as sa, san day, gung and nghe should be planted in plantation forests for the first two years for acacia plantations, and for the first four-to-five years for rubber plantations. proper tending techniques and proper seasonal timing to avoid storms will result in better yields.

SPECIFIC RECOMMENDATIONS

- Continue the research and identify the scientific names, as well as the uses, of other medicinal plants in the study area to strengthen conservation, development and utilisation in the future.
- Hold more training workshops on species identification and uses, planting, tending and processing techniques for medicinal plants in the study area.
- Continue doing research on the propagation of new species, especially rare and precious species of high economical value, and communicate this knowledge to local people.
- Identify the main high-value species such as san day, gung, sa, nghe vang, ba kich, binh voi, nhau, chac chiu and la khoi, in order to expand the scale of the models, especially the development of medicinal plants in natural forest areas.
- Encourage local people to identify the market demands for medicinal plants in the area, as well as the surrounding area.

For the sustainable development of forestry extension activities involving medicinal plants, the research team has following suggestions:

- Encourage local households to participate in forestry extension activities, especially those who do not have strong labour forces or production experience;
- Experienced and wealthy households should support households in difficulty, and encourage them to participate in production activities that bring about high efficiency;
- Community nursery groups should sow indigenous species, especially medicinal plants, in order to expand sources of cultivation material;
- Field trips should be organised in order to introduce other communities to planting and using medicinal plants;
- External support should be encouraged by creating favourable conditions for visitors to visit study areas, prepare ideas for research or explore opportunities for new projects; and
- Cooperation should be encouraged with other organisations in the area such as Bach Ma National Park, Hue University of Agriculture and Forestry etc. to improve research and communication in order to conserve and protect forest resources and increase local livelihoods.

GENERAL RECOMMENDATIONS

- Develop national plans for improving awareness of NTFPs development in general and medicinal plants in specific towards the sustainable management and utilisation of forest resources.
- Compile guidelines, cost norms and technical guides for propagating selected valuable and rare medicinal plant species for different environments such as home gardens, hilly gardens, plantation forests and natural forests.
- Develop a reasonable forest development and investment plan concerning the protection and development of NTFPs in general and medicinal plants in particular.
- Develop policies on NTFPs development and marketing in order to protect, preserve, harvest and utilize this resource sustainably.
- Compile specific sections for harvesting and conserving medicinal plants when compiling regulations on exploiting timber and NTFPs.

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Conservation and Development of Two Valuable and Rare Medical Plants - *Holarrhena antidysenterica* and *Clerodendron infortunatum* in Youth Settling Village, Phuc Trach Commune, Huong Khe District, Ha Tinh Province

Le Cong Luong[1]

BACKGROUND

The implementation period for the project was over 24 months from June 2004 to June 2006. The total budget comprised VND187,312,000.

OBJECTIVES OF THE PROJECT

General objectives

The project's objectives were biodiversity conservation in general and, in particular, the conservation and development of two valuable medical plants - *Holarrhena antidysenterica* (Mộc hoa trắng) and *Clerodendron Infortunatum* (Xích đông nam). It was hoped that through the project, local people's income would be increased, thereby contributing to poverty reduction and protecting forests and human health.

Concrete objectives

- Enhance awareness among local people of non-timber forest product (NTFPs) conservation and development in general, and *holarrhena antidysenterica* and *clerodendron infortunatum* in particular.
- Establish a nursery garden for these two medical plants with the total area of 600m2, which is capable of producing 20,000 breeding plants in the youth village centre, phuc trach commune, huong khe district, ha tinh province.
- Carry out the plantation of *holarrhena antidysenterica* and *clerodendron infortunatum* in three hectares of forest land, hill land and home gardens of 15 households in the village.
- Create long-term and sustainable medical sources for the production of two medicines derived from *holarrhena antidysenterica* and *clerodendron infortunatum* by ha tinh health equipment and medical joint stock company.
- Enhance the capacity of the alliance of associations for science and Technology in Ha Tinh to conduct research on NTFPs.

JUSTIFICATION FOR THE PROJECT

The Youth Settling village was found in 2000 and has now 150 youth households. Most of the area in the village is hill and forest land, with little area for agriculture. As the households have only recently settled in the area, income from fruit trees does not exist, creating serious financial problems for residents. The villagers are therefore forced to go to the forest to harvest forest products, which increases pressure on the forest resources and creates threats to the ecological balance of the area. The project aimed to support households in the village to develop more income sources from medical tree planting, increase their living standards and limit logging in the forest to contribute to biodiversity conservation.

1 Alliance of Associations for Science and Technology of Ha Tinh

Indeed, there is great demand for *Holarrhena antidysenterica* and *Clerodendron Infortunatum*. According to a report by the Ha Tinh Joint Stock Company for Health Equipment and Medicines, the company has to buy 10 tonnes of raw material annually from other provinces such as Hali Duong, Ha Tay and Nghe An to satisfy demand for the products. Hence, the development of a sustainable conservation model for these two medical plants will also contribute to the establishment of a source of medical materials in Ha Tinh province.

PROJECT RESULTS

- A nursery garden was developed for *holarrhena antidysenterica* and *clerodendron infortunatum* with a total area of 600m2, providing 10,000 young plants of each species for households participating in the project.
- Technical guidelines for nursery development were published and distributed to local people, which covered detailed informaiton on planting and taking care of the two medical plants.
- *Holarrhena antidysenterica* and *clerodendron infortunatum* were planted in the gardens of 15 households in the village, with a total area of three hectares. ninety per cent of the seedlings planted in the gardens survived.

ADVANTAGES AND DISADVANTAGES

Advantages

- Contracts for purchasing the plant products were signed between 15 project households and the ha tinh jsc for medicines and health equipment company, ensuring that local people continued to plant and take care of the medical plants.
- Awareness among local people regarding biodiversity and environment conservation, and the development of NTFPs in general and of holarrhena antidysenterica and Clerodendron Infortunatum in particular, was enhanced.

Disadvantages

- *Holarrhena antidysenterica* takes five-to-six years before it can be harvested, while the project lasted only two years. therefore, it is necessary to implement support mechanisms for local people to help in the care and protection of the medical plants until harvesting time.
- Local authorities do not have any policy regarding NTFPs planning in general or *holarrhena antidysenterica* and *clerodendron infortunatum* in particular. local people therefore have not received any additional support in the processing and planting of these medical plants.

RECOMMENDATIONS

Holarrhena antidysenterica and *Clerodendron Infortunatum* are normally two wild plants, which were domesticated for trial planting in this project. Thus, some additional studies should be carried out to assess growth rates and the chemistry reserves of the plants compared with their wild counterparts.

Holarrhena antidysenterica is a long-term investment for project participants and requires a great deal of time before any financial benefits can be seen. Therefore, additional support is needed and other alternative models should be integrated into the project to ensure sustainability and help provide local people with an income while they wait for this plant to be harvested.