

**WILD FOR A CURE:  
GROUND-TRUTHING A STANDARD  
FOR SUSTAINABLE MANAGEMENT OF  
WILD PLANTS IN THE FIELD**

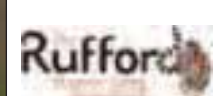
**COMPILED BY**

WOLFGANG KATHE, BRITTA PATZOLD, DANNA LEAMAN,  
ANASTASIYA TIMOSHYNA, DAVID NEWTON,  
EANGHOURT KHOU, GIRIDHAR KINHAL, INDU BIKAL SAPKOTA,  
MOHD. KHALID SAYEED PASHA, NOUHOU NDM,  
ROLAND MELISCH, SLADJANA BUNDALO, SUSANNE HONNEF,  
THOMAS OSBORN, XIMENA BUITRÓN AND XUEYAN LIU

**A TRAFFIC REPORT**

**TRAFFIC**  
the wildlife trade monitoring network

This report was published  
with the kind support of



Published by TRAFFIC International,  
Cambridge, UK.

© 2010 TRAFFIC International.  
All rights reserved.

All material appearing in this publication is copyrighted and may be reproduced with permission. Any reproduction in full or in part of this publication must credit TRAFFIC Europe as the copyright owner.

The views of the authors expressed in this publication do not necessarily reflect those of the TRAFFIC network, WWF or IUCN.

The designations of geographical entities in this publication, and the presentation of the material, do not imply the expression of any opinion whatsoever on the part of TRAFFIC or its supporting organizations concerning the legal status of any country, territory, or area, or of its authorities, or concerning the delimitation of its frontiers or boundaries.

The TRAFFIC symbol copyright and Registered Trademark ownership is held by WWF. TRAFFIC is a joint programme of WWF and IUCN.

**Suggested citation:** Kathe, W.; Pätzold, B.; Leaman, D.; Timoshyna, A.; Newton, D.; Khou, E.; Kinhal, G.; Sapkota I.B.; Pasha, M.K.S.; Ndam, N.; Melisch, R.; Bundalo, S.; Honnef, S.; Osborn, T.; Buitrón, X.; and Liu, X. (2010). *Wild for a Cure: Ground-truthing a Standard for Sustainable Management of Wild Plants in the Field*. TRAFFIC International.

ISBN 978-1-85850-241-0

**Front cover photograph:** *Pelargonium sidoides*

**Photograph credit:** WWF/TRAFFIC/Britta Pätzold.

## **WILD FOR A CURE:**

### **GROUND-TRUTHING A STANDARD FOR SUSTAINABLE MANAGEMENT OF WILD PLANTS IN THE FIELD**

*Compiled by* Wolfgang Kathe; Britta Pätzold; Danna Leaman; Anastasiya Timoshyna; David Newton; Eanghourt Khou; Giridhar Kinhal; Indu Bikal Sapkota; Mohd. Khalid Sayeed Pasha; Nouhou Ndam; Roland Melisch; Sladjana Bundalo; Susanne Honnef; Thomas Osborn; Ximena Buitrón; and Xueyan Liu



*Credit:* Arpana Basappa

Resident from Shiragunji Village Forest project site,  
Honnavar Forest Department, Karnataka, India

# CONTENTS

<b>Abbreviations and acronyms</b>	iii
<b>Acknowledgements</b>	iv
<b>Executive summary</b>	v
<b>Background</b>	1
The importance of medicinal and aromatic plants	1
<b>Introduction</b>	1
<b>Methods</b>	4
Criteria for selection of project sites	4
Guidance materials	5
Promotional materials	5
Stages of project implementation in the field	6
Reporting and co-ordination	7
<b>Results</b>	9
Results by country	9
Brazil	9
Cambodia	13
India	17
Lesotho/South Africa	22
Nepal	25
South-east Europe and Bosnia-Herzegovina	28
Overall findings regarding ISSC-MAP as a tool	32
Lessons learned from country field projects	36
<b>Conclusions</b>	39
<b>Recommendations</b>	40
<b>References</b>	42
<b>Annex: Project documents obtainable from TRAFFIC</b>	44

## ABBREVIATIONS AND ACRONYMS

ABS	Access and Benefit Sharing (a framework requirement under CBD)
ASEAN	Association of Southeast Asian Nations
AVIVE	<i>Associação Vida Verde da Amazônia</i> , Brazil
BfN	<i>Bundesamt für Naturschutz</i> (German Federal Agency for Nature Conservation)
BIMSTEC	Bay of Bengal Initiative for Multi-sectoral Technical and Economic Co-operation
BMU	<i>Bundesministerium für Umwelt, Naturschutz und Reaktorsicherheit</i> (German Federal Ministry for the Environment, Nature Conservation and Nuclear Safety)
BMZ	<i>Bundesministerium für Wirtschaftliche Zusammenarbeit</i> (German Federal Ministry for Economic Co-operation and Development)
CBD	Convention on Biological Diversity
CITES	Convention on International Trade in Endangered Species of Wild Fauna and Flora
COMIFAC	<i>Commission des Forêts d'Afrique Centrale</i> (Central African Forest Commission)
CoP	meeting of the Conference of the Parties to CITES/CBD
COPRONAT	<i>Cooperativa de Produtos Naturais da Amazonia</i> (funded by AVIVE), Brazil
CPA	Community Protected Area
DED	<i>Deutscher Entwicklungsdienst</i> (German Development Service)
DGIS	Directorate General for International Co-operation, The Netherlands
FAO	UN Food and Agriculture Organization
FARMA	Fostering Agricultural Markets Activity
FiT	Funds in Trust Programme (BMZ)
FRLHT	Foundation for Revitalization of Local Health Traditions, India
GACP	Guidelines on Good Agricultural and Collection Practices
GPS	Global Positioning System
GSPC	Global Strategy for Plant Conservation (CBD)
GTZ	<i>Deutsche Gesellschaft für Technische Zusammenarbeit</i> (German Society for Technical Co-operation.)
ICCO	the Interchurch Organisation for Development Cooperation
ICEI	the <i>Instituto Cooperazione Economica Internazionale</i>
ICIMOD	International Centre for Integrated Mountain Development, Nepal
IFOAM	International Federation of the Organic Agriculture Movements
IMO	<i>Institut für Marktökologie</i> , Switzerland
INPA	<i>Instituto Nacional de Pesquisas da Amazônia</i>
ISSC-MAP	International Standard for Sustainable Wild Collection of Medicinal and Aromatic Plants
IUCN	The International Union for Conservation of Nature
KCA	Kangchenjunga Conservation Area (Nepal)
LNPBZ	Langtang National Park Buffer Zone (Nepal)
MAP	medicinal and aromatic plants
MDG	Millennium Development Goal (UN)
MPCA	Medicinal Plant Conservation Area
NDF	Non-detriment Finding (a requirement for trade in CITES Appendix-II specimens)
NGO	non-governmental organization
NMPB	National Medicinal Plants Board of India
NTFP	Non-timber Forest Product
RofE	Regional Office for Europe (of IUCN)
SIDA	Swedish International Development Agency
IUCN-SUR	IUCN Regional Office for South America
VAMP	Vlasenica <i>Allium ursinum</i> Management Plan (Bosnia and Herzegovina)
VFC	Village Forest Committee (India)
WII	Wildlife Institute of India, Dehradun, India
WHO	World Health Organization
WOCMAP	World Congress on Medicinal and Aromatic Plants (Cape Town, 2008)
WWF	the global conservation organization

## ACKNOWLEDGEMENTS

The successful implementation of this project is an example of inter-country, inter-regional and interdisciplinary expertise, support and co-ordination provided by innumerable people in the countries and regions involved and at an international level. TRAFFIC acknowledges with gratitude their dedication and support. Besides all authors of this report, the following colleagues and associates have contributed substantially to the project on which this report is based, and to the report itself: Frank Barsch, Sue Watson, Jürgen Matijević and Patrick Weber (WWF Germany); Guillermo Castilleja, Timothy Geer, Celine Beaulieu, Aurore Sajhau and Johary Rakotojohary (WWF International); Julia Marton-Lefèvre (IUCN); Sabita Thapa, Bheh Raj Oli, Ashok Baniya, Rudriksha R. Parajuli, Sujeet Shrestha, Niki Maskey (WWF Nepal); B. Arpana, K.D. Haridasan and K. Ved (FRLHT, India); Dr B.S. Adhikari, Dr G.S. Rawat, Priyanka Bhatt, Dr Amit Kotia and P.R. Sinha (WII), Dr B.S. Sajwan (NMPB) and Dr R.B.S. Rawat (Principal Chief Conservator of Forests, Uttarakhand Forest Department); Stephen Kelleher, Lucy Emerton, Kristy Facer, Marcelo Argüelles and Liliana Pires (LLS, IUCN); Arturo Mora, Manuela Gonzalez, Frederico Soares Machado and Jörg Elbers (IUCN-SUR); Barbara Schmal, Valda Roso, Robert Viana and Márcio Batista (AVIVE and COPRONAT, Brazil), Adriana Pellegrini (INPA, Brazil); Rankica Bahtijarevic, Branco Duric (Agriculture Faculty University of Banja Luka), Vesna Veljancic (Ministry of Agriculture and Forestry of Republika Srpska), John Furnari (UNDP, Bosnia and Herzegovina), Azra Korac-Mehmedovic, (Federal Ministry of Environment, Bosnia and Herzegovina), Lazar Vidovic', Dragica Petrovic' and Josip Buh (Forest Authority Birac, Vlasenica) and Dordo Maric and colleagues (Elmar d.o.o, Bosnia and Herzegovina); Gabor Magyar (CEO WWF-Hungary); David Ashwell (Eco-initiative director); Mr. Seng Teak (WWF-Cambodia); HE Chay Samith, Sy Ramony, Suy Thea, Kim Sarin, Yang Phirum and rangers of Bokor National Park (Ministry of Environment, Cambodia); Dr Heang Punley, Dr Pen Sunna and Thai Savy (National Centre of Traditional Medicine, Cambodia); HE Ty Sokhun, HE Ouk Sokhon, HE Hourt Bunnary, Chhang Phourin, Lic Vuthy and Suon Phalla (Forestry Administration, Ministry of Agriculture, Forestry and Fishery, Cambodia); Prof. Yok Lin (Royal University of Phnom Penh, Cambodia); Prof. Von Monin and Kim Soben (Royal University of Phnom Penh, Cambodia); Ou Teymea (Khmer Habitat); Chea Suon, Um Nay and Khat Sokhorn (MAP traders in Phnom Penh, Cambodia); local community, authority, traders of Prek Tnoat commune, Cambodia; NGOs Save Cambodian Wildlife; Fauna and Flora International; Conservation International; Normad; Medicine de la nature; NTFP-EP; Asian Foundation; Pact-Cambodia; and National Committee for the Management of Decentralization and De-concentration; EU-China Biodiversity Programme (ECBP); WWF-China; IUCN China Programme Office; Christine Chizana, Domitilla Raimondo and Pethole Manyama (South African National Biodiversity Institute); Dr Taelo Letsela and his team (Lesotho CITES Scientific Authority, based at the National University of Lesotho); the Mazda Wildlife Fund; Dr Rachel Wynberg and Jaci van Niekerk (University of Cape Town's Environmental Evaluation Unit); Ulrich Feiter (Parceval), Kersten Paulsen (BZH) and their colleagues; Bruno Streit (University of Frankfurt am Main, Germany); Josef Brinkman (Traditional Medicinals Inc., USA); Susan Curtis (Neal's Yard Remedies, UK); Uwe Schippmann, Beate Jessel and Natalie Hofbauer (BfN, Germany); Jorge Cabrera (IUCN-ELC) and Sonia Lagos-Witte (Costa Rica); Marita Steinke and Anne-Kathrin Pfeiffer (BMZ); and Steven Broad, Caroline Gill, Julie Gray, Ritu Kanotra, Teresa Mulliken, Marcus Phipps, Samir Sinha, Richard Thomas, Angelina Montes, Chris Turton and Sulma Warne (TRAFFIC). For their excellent film and photographs, thanks are due to Jan and Melanie Haft of Nautilus TV (Germany).

In particular, we are indebted to those organizations that contributed to funding the project, namely the German Federal Ministry for Economic Co-operation and Development (BMZ), as the main funding agency, as well as the German Federal Agency for Nature Conservation (BfN); German Society for Technical Co-operation (GTZ–Mannus); the Rufford Maurice Laing Foundation; IUCN (LLS, supported by DGIS); UICN-SUR; IUCN ROfE—through the Count Down 2010 Initiative financed by the European Commission; the Interchurch Organisation for Development Cooperation (ICCO); the *Instituto Cooperazione Economica Internazionale* (ICEI); *Hamburger Stiftung Asien-Brücke* (Germany); the Centre for International Forest Research (CIFOR), Central Africa; WWF Germany; Schwabe Germany; and the University of Frankfurt am Main, Germany.

## EXECUTIVE SUMMARY

Nearly every human being benefits from medicines derived from wild plants. The poor in developing countries are particularly reliant on plant-based medicines and frequently also on the income provided by harvest of plants for sale. However, many wild plant species are at risk from overuse and habitat loss and so are the healthcare systems and livelihoods they support. The decline in plant populations is often the result of demand within urban and foreign markets, rather than to meet the healthcare needs of the local population: demand for natural products in food, cosmetics and medicinal market sectors is growing worldwide, posing socio-economic problems, and opportunities, in countries of origin, as well as ecological problems.

This report presents a description of the project “Saving Plants that Save Lives and Livelihoods”, implemented by TRAFFIC and its partners WWF, IUCN and others, which addresses a growing demand from industry, governments, certification bodies, resource managers and donor agencies for specific guidance on sustainable wild plant collection practices. Within this project, the International Standard for Sustainable Wild Collection of Medicinal and Aromatic Plants (ISSC-MAP, since late 2008 part of the FairWild Standard), a comprehensive tool for verifying sustainable wild collection, was tested on the ground in a variety of situations in six selected project areas in Bosnia-Herzegovina, Brazil, Cambodia, India, Nepal, Lesotho and South Africa. The various implementation contexts included: existing resource management schemes (both community- and State-managed); a protected area context; situations with links to existing regulatory requirements, including those for CITES Non-detriment Findings; and field-level partnership with business and local non-governmental organizations (NGOs). Promotional and advocacy work, for example targeting relevant international fora; provision of guidance materials for ISSC-MAP implementation (in Portuguese, Khmer, Hindi, Kannada, Nepali and Serbo-Croat); and co-ordination and oversight of the project was conducted by the ISSC-MAP Secretariat.

Through its participatory approach, the project achieved a high level of local uptake of ISSC-MAP and facilitated the development of national, regional and international stakeholder networks, which are crucial for continuous implementation and scaling up of activities. The project contributed substantially to raising awareness among governments of the need for sustainable management and trade models when developing regulatory frameworks relevant to medicinal and aromatic plants. It established that ISSC-MAP was a useful instrument to improve understanding of natural plant resources and integration of local communities into the economy, while simultaneously working for the maintenance of wild plant populations.

A series of challenges and successful approaches were identified through this project and, based on these, recommendations for improving the management of wild plants are as follows:

- **Regulatory context.** Agencies engaged in sustainable wild plant collection should acquire a thorough understanding of the legal context within which they will be operating, in order to work in concert with it. In settings where laws governing collection and management of wild plants are found to be in need of updating or otherwise improving, legislators should consider using ISSC-MAP principles as a guide to revision of such laws. In this way, they would simultaneously achieve synergy with goals of international environmental agreements such as the Convention on Biological Diversity (CBD). In contexts where legislation specific to wild plants is absent, legislators should consider mainstreaming ISSC-MAP into national and/or local law.
- **Partnership.** Projects for sustainable wild plant collection should engage local stakeholders, for example businesses, local collectors, and local organizations with experience in the field, in partnership, including by identifying clear and realistic market openings for harvested products.
- **Project documentation.** In many locations with a strong tradition of organized collection of wild plants there can be a wealth of knowledge on wild plants that is not necessarily written down. Project staff engaged in management of harvest of wild plants should take care to ensure that documentation available to support schemes is appropriate to local needs.
- **Training.** Projects on sustainable wild plant collection should factor in ample time and funds for capacity-building and training of local project workers in resource assessment, harvest monitoring, collection and processing techniques, protection of their traditional knowledge, and benefit-sharing.
- **Project time span.** Project managers aiming for sustainable wild plant collection should adopt a long-term perspective in order to allow time to support projects through to stability.
- **Certification.** Project managers, governments, NGOs and others involved in sustainable collection of wild plants should evaluate on a case-by-case basis whether certification is the best option for reinforcing sustainability.
- **International co-ordination.** The current project benefited from centralized and fully funded co-ordination and standardization of efforts on the ground, including to support compliance and promote relevance to inter-governmental conservation and development frameworks, such as the CBD. Similar projects should take care to install oversight at this higher level.
- **Research.** Scientists and other individuals with appropriate local knowledge should consider prioritizing research on plant species for which sustainability of wild harvest is a major concern, to safeguard species important for health and livelihoods.
- **Initiation of a value-adding strategy and market development.** Development agencies involved in projects adding value to raw plant material should also support capacity-building and tools for resource management.



## INTRODUCTION

This report provides a general overview of the results of a project entitled “Saving Plants that Save Lives and Livelihoods”, designed to demonstrate that effective sustainable management of wild-collected medicinal and aromatic plants is possible on the ground. In the context of this report, the term “medicinal and aromatic plants”—MAPs—signifies “plants used to produce pharmaceuticals, dietary supplement products and natural health products, beauty aids, cosmetics and personal care products as well as some products marketed in the culinary/food sector” (Medicinal Plant Specialist Group, 2007). Development of this project followed as the logical next step after drawing up a standard to guide sustainable use systems for MAPs, namely the International Standard for Sustainable Wild Collection of Medicinal and Aromatic Plants (ISSC-MAP), published in 2007. Any standard is only ever as good as its implementation.

The **Background** section of this report provides information on the rationale, history and inception of the project. A description of the structure of the project and its methods precedes country-by-country accounts of project implementation experiences followed by sections on over-arching results at the international level, and on lessons learned from the project. Recommendations for further development of the project’s aims are made, based on conclusions regarding the successes and lessons learned.

This report is provided primarily to inform the efforts of government agencies, social and environmental non-governmental organizations (NGOs) and MAP-reliant businesses. However, it can also be used by community groups, resource managers and other local stakeholders at field implementation sites. It is hoped this record of implementation of sustainable wild MAP production approaches will be a useful contribution to a future where sustainable wild plant collection is increasingly accepted as a norm, based on an understanding that the safeguarding of diversity in nature is integral to human lives and livelihoods.

## BACKGROUND

### The importance of medicinal and aromatic plants

Degradation of the natural environment and of the wild living resources it provides has caused a decline in well-being, notably for many poor people in developing countries who depend directly on wild animals and plants for their survival. Plants with medicinal and related applications are valued in many parts of the world, being used in all forms and systems of medicine, from traditional and folk medicine to complex systems, such as Ayurveda, homeopathy and modern Western medicine. Moreover, their collection and sale provide an important source of income for many rural households in source countries. Most species are not cultivated, but collected from the wild (Schippmann *et al.*, 2006), where their populations have declined considerably in many cases during the past decades. The increasing global human population and associated demand for natural resources has not only led to

frequent over-collection of plants but additionally triggered land and habitat degradation that also contributes to their decline. For these reasons, sustainable harvesting and management of resources in source countries and transparent and responsible trade mechanisms along the supply chain, are essential to ensure the long-term survival of wild plant populations, their habitats, and related traditional knowledge. Sustainable wild harvesting and trade are promoted by international conventions, such as the United Nation's Convention on Biological Diversity (CBD), and are increasingly part of discussions at all levels (from local to worldwide) and within all sectors (from community group representatives, to private sector players, to governments). While the general goal of sustainability is included in many strategy and policy documents, the projected rise in the global human population by around two billion by the middle of the millennium argues urgently for the concrete implementation of such approaches. Respect for traditional use rights and adequate participation of local and/or indigenous communities in the sharing of benefits are crucial for the sustainable and equitable management of these resources.

## **TRAFFIC and medicinal and aromatic plants**

TRAFFIC has spent more than 20 years working on the development and promotion of sustainable harvest, management and trade in MAPs. This work has included:

- support to the Declaration on the Conservation of Medicinal Plants deriving from the International Conference on Medicinal Plants, in Bangalore, 1998 (Anon. 1998);
- comprehensive studies of the conservation of and trade in MAPs (e.g. Lange, 1998; Marshall, 1998; and Silva *et al.*, 2001);
- the establishment of an international network of MAP experts and stakeholders;
- participation in the development of the World Health Organization (WHO) Guidelines on Good Agricultural and Collection Practices (GACP) for Medicinal Plants (WHO, 2003);
- the development, with partner organizations, of ISSC-MAP, the first standard of its kind applying specifically to MAPs, between 2004 and 2007 (MPSG, 2007);
- contribution to achieving the aims of the CBD, particularly targets 3, 11, 12, 13 and 16 of its Global Strategy for Plant Conservation (GSPC) (CBD, 1992 and 2002); and
- contribution to implementation of the Millennium Development Goals (MDGs), for example Goal 7 relating to environmental sustainability (United Nations, 2002 and 2005).

### ***Development of ISSC-MAP***

Since the late 1990s, the work of TRAFFIC and its partners on MAPs has focused on stakeholder engagement. At EXPO 2000 in Hannover, Germany, TRAFFIC was instrumental in securing signatures for the "Joint Declaration for the Health of People and Nature" from the *Bundesministerium für Umwelt, Naturschutz und Reaktorsicherheit* (BMU) (the German Federal Ministry for the Environment, Nature Conservation and Nuclear Safety), the *Bundesministerium für Wirtschaftliche*

*Zusammenarbeit* (BMZ) (the German Federal Ministry for Economic Co-operation and Development), and representatives of important companies in the MAP sector, scientific institutions and conservation NGOs. This declaration acknowledged the demand for action against medicinal plant resource depletion through co-operation amongst all stakeholders in the sector. Following this important step, WWF Germany established a working group of traders and manufacturers (from the pharmaceutical, herbal, food and cosmetics industries) and personnel from certification bodies in the MAP sector to raise awareness of the necessity of converting wild plant collection to sustainably managed operations. Many companies agreed with these conservation aims, but were concerned that converting to such operations would lead to uncertainty over raw material supply, quality assurance, and food safety requirements. While the private sector has a strong incentive to develop its own mechanisms to ensure standards in these areas, most companies emphasized that they would need further guidance regarding the ecological aspects of sustainable sourcing of plants from the wild: the idea was born to develop a set of principles and criteria to provide guidance on this—ISSC-MAP.

ISSC-MAP was developed from 2004 to 2007 by a joint initiative of the *Bundesamt für Naturschutz* (BfN) (German Federal Agency for Nature Conservation), TRAFFIC, WWF and IUCN, with funds provided by these founding institutions and others. The development process included widespread external consultation (with over 150 experts from 40 countries), through an international and interdisciplinary advisory group involving stakeholders from governments and related agencies, NGOs, companies and certification bodies, and other experts in ecologically and socially sustainable production, organic certification and ethical business development. The first version of the Standard was published in early 2007. Its development and implementation were governed by a decision group comprising representatives of the founding organizations and from the Foundation for Revitalization of Local Health Traditions (FRLHT), based in India; the US-based Traditional Medicinals Inc.; and the Swiss *Institut für Marktökologie* (IMO). In 2008, the ISSC-MAP was endorsed by the FairWild Foundation and is now part of the FairWild Standard (see **Box 1**), the merger having been formalized during the fourth IUCN World Conservation Congress in Barcelona the same year.

**Box 1: Implementation of ISSC-MAP as part of the FairWild Foundation**

by Britta Pätzold

In October 2008, the four founding institutions of ISSC-MAP signed an agreement to endorse global implementation of the Standard through the FairWild Foundation. ISSC-MAP has become the ecological module of the FairWild Standard, which also measures social and economic components of the harvest and trade of wild plants via a framework of principles and criteria. As such, certification of conformity with ISSC-MAP is now offered under the FairWild Label. The Foundation's aim is the establishment of "a worldwide framework for implementing a sustainable, fair and value-added management and trading system for wild-collected natural ingredients and products thereof".

As the project on which this report is based started before the merger of ISSC-MAP with FairWild, ISSC-MAP terminology will be kept in this report.

## **The “Saving Plants that Save Lives and Livelihoods” project—implementation of ISSC-MAP**

In 2007, TRAFFIC and its partners IUCN and WWF established the project “Saving Plants that Save Lives and Livelihoods”, essentially to translate the theory of ISSC-MAP into practice. The project ran from November 2007 to March 2010 and had the following objectives:

- 1. Identification of priority species** for the development of sound harvest and trade management systems.
- 2. Enhanced capacity of harvesters and local resource managers to implement the elements of ISSC-MAP**, for instance resource assessment and management planning.
- 3. Initiation of ISSC-MAP implementation** through sustainable management and equitable benefit-sharing. Specifically the project aimed to produce a management plan for each regional project site and species selected.
- 4. Enhanced awareness** and increased acceptance of approaches to sustainable wild MAP use by key stakeholders.

The following sections present the findings and experiences of the “Saving Plants that Save Lives and Livelihoods” project.

## **METHODS**

Considerable research, such as selection of project countries and preparation of guidance materials, was conducted in advance of going into the field (see **Criteria for selection** of project sites and **Guidance materials** below). Some assessment of potential project species and trends in MAP market chains was also conducted prior to beginning work on site. Steps in project implementation within project countries followed a broadly similar sequence (see **Stages of project implementation**). Effort was also directed to scaling up the project beyond the selected case study regions where openings allowed.

### **Criteria for selection of project sites**

Criteria drawn up for selecting sites for testing implementation of ISSC-MAP included the requirement that the Standard should be introduced in a variety of situations. It was agreed that, between them, the sites should have:

- **a wide geographical range**, in order to get feedback on how different regional conditions could influence ISSC-MAP implementation;
- **a wide range of implementation scenarios**. The following were considered:
  - *Implementation within existing resource management schemes*. Resource management is often in place for the harvest and collection of wild plant material, with different stakeholders (e.g. government authorities or communities) responsible for management, according to local conditions.

- *Implementation within a protected area and/or buffer zone.* This is a specific case of resource management, in which management of the area is often as important as management of collection.
- *Implementation linked to regulatory systems.* ISSC-MAP can be used as a tool to inform provincial, national, or international regulatory processes. The Standard could either be used as a whole in regulations, or integrated into regulations in parts, or referred to as a set of rules to observe or consider.
- *Implementation in the context of CITES Non-detriment Findings (NDFs):* an “NDF” is a precondition for trade in CITES-listed Appendix-II species, whereby CITES Parties are required to ascertain that trade will not be detrimental to the survival of the species. ISSC-MAP could be used as a guide for conducting NDFs.

Third-party certification was not a specific objective of the project and hence not linked to selection criteria, owing to the lack of a fully developed certification system for ISSC-MAP—such a system has only been developed since integration with the FairWild Standard: for further information, see [www.fairwild.org](http://www.fairwild.org).

In terms of requirements for individual sites, the selection criteria specified that each site should have:

- **availability of partnerships** and networks to facilitate efficient project implementation within the short project timeframe available;
- the likelihood of a **comprehensive stakeholder approach**;
- availability of **structures to promote, scale up and raise funds** for ISSC-MAP implementation beyond the project itself.

Based on these criteria, locations in Bosnia and Herzegovina, Brazil, Cambodia, India, Lesotho/South Africa and Nepal were chosen via a desk study, including correspondence with people in the field, by project supervisors. Details of specific sites chosen are provided in the country sections of **Results**.

## Guidance materials

During the project period two key guidance documents were developed by the ISSC-MAP Secretariat, one on resource assessment (see **Box 2**) and the other on management planning. These documents were sent to all field projects in early 2008. Feedback on the usefulness of these documents on the ground will be taken into account in refining them in the future.

## Promotional materials

To raise awareness of ISSC-MAP among key international stakeholders in governments, NGOs, trade associations, companies and others, the project produced a number of promotional tools, including a

film produced by Nautilus TV called *Healing Power from Nature*, produced for CBD CoP 9, in Bonn in May 2008, and including footage shot by a film crew in Nepal and Southern Africa. On 26 October 2008, the film won a prize from the Ministry of Health of the Slovak Republic at the 35th International Festival of Sustainable Development Films. It has been viewed thousands of times via the Internet in German, English and Japanese logged and has triggered a lot of interest in ISSC-MAP and options for its implementation.

The ISSC-MAP and FairWild websites and printed promotional material, such as flyers and factsheets, provided important tools for enhanced awareness of approaches to sustainable wild MAP use, particularly for the private sector. This assisted the FairWild Secretariat in one of its key functions, the facilitation of market links between producers, buyers and manufacturers of sustainable consumer products. At BioFach 2009, materials with the new FairWild design were launched and the FairWild Foundation presented itself as the embodiment of ISSC-MAP for the first time.

## Stages of project implementation in the field

Project staff began work on site from November 2007 and remained up to the end of 2009. Once in the field, a preliminary task was to set up a start-up workshop to discuss potential species and sites for project implementation, in consultation with the ISSC-MAP Secretariat, and to encourage multi-stakeholder participation. The exception was South Africa/Lesotho, where selection of species and site were made in advance, there being clear reasons for choosing the species *Pelargonium sidoides*. Work plans developed at start-up workshops outlined stages of project implementation, according to which the following steps were undertaken:

**1) A situation analysis** was carried out to get basic information on potentially relevant species and details of socio-economic structures (information on collectors, traders, prices, traditional use, relevant legal issues, stakeholders' interests, etc.). This was done as a team, with participating stakeholders. Most regional projects then developed a shortlist of potential sites and species, making decisions on species selection according to criteria in the following categories:

- conservation status of the species
- regulatory status of species
- scope and quality of available knowledge (local, traditional, scientific)
- importance of wild collection of the species for local livelihoods and economic development
- availability of national and/or international market links, market acceptance or likelihood of establishing such links for the species considered
- availability of a business concept
- availability of project infrastructure

One of the tools for species selection was a conservation status matrix, based on the “Predictors of Resilience or Vulnerability to Harvesting” matrix originally designed by Cunningham (2001), assessing factors including geographic distribution, population sizes, plant uses and likelihood of sustainable harvesting.

**2) Following completion of the situation analysis, final decisions were taken on project site, target species and development of an action plan** for the site.

**3) Translation of all project materials**, including the Standard, into the local language. In some cases, a more basic version of documents was used for work in the field.

**4) Development of training materials and implementation of training sessions** on different aspects of the project work, as needed (for example, on resource assessment methods).

**5) A resource assessment**, using the methodology described in **Box 2**. This assessment was undertaken to determine the conservation status, abundance, growth rates, trade volumes and sustainable use thresholds of selected species in the target area.

**6) The output of the resource assessment provided the basic information necessary to produce a management plan** for the target species, following advice in a guidance document issued to all project field staff.

**7) Production of local-language communication materials for various stakeholder groups**, in order to raise awareness. Additionally, all regional projects arranged meetings with regional and national decision-makers and institutions to inform them of the project, to raise support for it, to explore links to existing frameworks, and to pave the way for future upscaling of the project. When opportunities presented themselves, regional projects were represented at relevant trade fairs (e.g. BioFach in Germany and India)—see **Overall findings**.

## **Reporting and co-ordination**

A formal system of bi-monthly internal reporting, together with two workshops held in Germany, allowed exchange of experiences and evaluation of project implementation in progress, with scope for adaptation of the work plan.

**Box 2: Resource assessment and adaptive management: the keys to sustainable MAP collection** by Danna Leaman, Medicinal Plant Specialist Group, IUCN-SSC

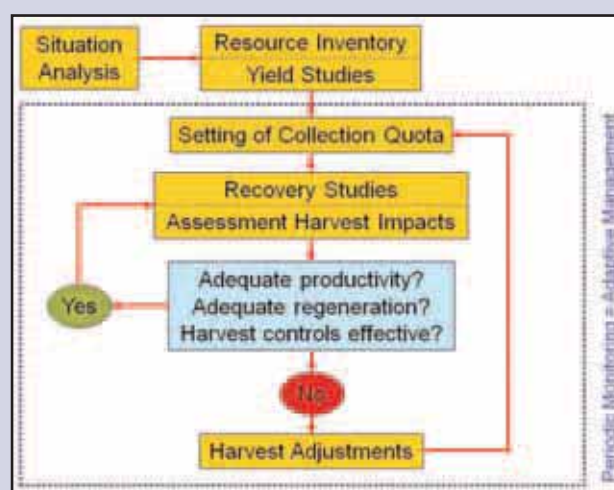
**Resource assessment** enables collectors and other resource managers to: i) estimate *sustainable harvest limits* for a specific resource within a particular collection area; ii) observe and understand the impact of current *harvest protocols* (specific methods, often with agreed limits) on the recovery of the target resource; and iii) make the *needed adjustments* in harvest protocols to maintain the target resource at sustainable levels.

**Adaptive management**—a process of continually assessing, monitoring and adjusting resource collection practices, in order to reach a desired objective, such as controlling harvest levels and practices within estimated limits of resource replacement and recovery—is fundamental to sustainable resource use. Resource assessment is an essential component of an adaptive management process and without these two inter-linked components, any claim to sustainable wild collection lacks credibility. An adaptive management plan provides the foundation for developing a programme of sustainable use to reach a balance between resource demand and resource supply. The need for this balance is addressed as the first principle of the International Standard for Sustainable Wild Collection of Medicinal and Aromatic Plants (ISSC-MAP),

Guidance on resource assessment and adaptive management provided to the project used participatory and adaptive management approaches. It specified five basic steps needed to design and carry out a resource assessment and monitoring process to meet the requirements of ISSC-MAP (see figure and text below):

- 1) *Situation analysis* to gather and evaluate existing knowledge about target or candidate species and the collection situation;
- 2) *Resource inventory and yield studies* to understand how much of the target/selected species is present within the collection area and the time required to replace the material harvested;
- 3) *Setting collection quotas or other controls* within the estimated limits of sustainability and using appropriate practices;
- 4) *Assessment and periodic monitoring of harvest impacts* to determine whether current harvest levels and controls are resulting in adequate resource regeneration and productivity; and
- 5) *Harvest adjustments* to revise the harvest protocol if the intensity, frequency, timing, and methods of harvest are not sustainable.

Process of assessing, monitoring and adjusting the annual sustained yield



Management of wild plant resources, including medicinal and aromatic species, is complex and characterized by high levels of uncertainty about population size, growth rates, variation in yields and even the correct identity of the plants being harvested. There are great variations in time and effort required for resource assessment depending on the terrain, species diversity, expertise available, and resource management context for each situation. These factors influence the costs, complexity, and time required to undertake resource assessment and management.



## RESULTS

### Results by country

#### *Project site 1: Brazil—Saraca Island/Silves (Amazonas State)*



**Cumaru *Dipteryx odorata*, Brazilian Amazon.** Credit: Juvenal Pereira/WWF-Brazil



Source: WWF Germany

**Location of the project site in Brazil (see asterisk)**

### Background

A strong social context for collection of wild plants in the Brazilian Amazon has grown up around Rubber Tree *Hevea brasiliensis* (Seringueira) and Brazil Nut *Bertholletia excelsa* (Castanheira) harvest, which have had a strong influence on the local economy (Allegretti, 1987). Many other plants, such as palms like Acaí *Euterpe precatoria* and fruits of Cacao *Theobroma cacao* and Bacuri *Rehedia macrophylla*, are frequently used by local people for human and animal health treatments. Ethnobotanical information on these species is available and can contribute to the revitalization of cultural awareness conducive to sustainable plant use.

## Identification of priority site/species

The project site chosen, Saraca Island, in Silves Municipality, Amazonia, has many wild plant species used by local people; has links with the *Associação Vida Verde da Amazônia (AVIVE)*, a women's organization established in Silves in 1999 to develop products based on sustainably collected native wild plants; benefits from private sector interest in products made from plants harvested; and is of relevance to Access and Benefit Sharing (ABS)<sup>1</sup> and Traditional Knowledge (TK)<sup>2</sup> issues.

Regarding species choice, the decision was to open up possibilities for ISSC-MAP implementation for several of the most important species collected in the area, with the aim of conducting resource assessments for all of them and integrating their management into a comprehensive plan after the end of the project.

Species selected were:

- Puxuri *Licaria pucheri*, used for stomach disorders, rheumatism and insomnia;
- Andiroba *Carapa guianensis* and Andirobinha *Carapa procera*, used to treat worms, bacterial infections, fever and rheumatism;
- Burití Palm *Mauritia flexuosa*, used in oils, sun creams and other skin applications; and
- Preciosa *Aniba canelilla*, which produces an essential oil appreciated for its scent.

Priority actions were identified for those species not selected, yet of interest to the community and industry, for example Cumaru *Dipteryx odorata*; Pau Rosa *Aniba roseaodora*; Copaiba *Copaifera* spp. and Breu *Protium* spp.



Credit: IUCN/Ana Delfina.

**Project training for AVIVE and COPRONAT members in Brazil**

### *Promoting acceptance of sustainable use of wild MAPs*

Engaging the participation of stakeholders was the key to success in marrying traditional medicinal plant collection practices with the aims of ISSC-MAP. A workshop was organized to introduce ISSC-MAP to stakeholders, with input from the project and from AVIVE. Other stakeholders participating included

representatives of industry, government, NGOs, academic and research institutes, botanic gardens, associations and communities. To increase understanding of available local knowledge, an analysis of

<sup>1</sup> in relation to the Access and Benefit-sharing provisions of the CBD; <sup>2</sup> CBD Parties work to preserve knowledge and practices of indigenous communities that embody traditional lifestyles relevant for biodiversity: this knowledge and practice is referred to as "Traditional Knowledge".

local collection practices was initiated, including interviews with collectors. This proved to be valuable to everybody involved, including the holders of the local knowledge, as they became more aware of the value of their own knowledge. Potential synergies between local management systems and collection practices and ISSC-MAP management requirements were analysed and the results were integrated into drafts for a site management plan. The information and knowledge exchange between the project staff and local people helped to make the Standard come alive because it could be linked to the local situation: ISSC-MAP implementation made an important transition from theory to practice in the hearts of the collectors, their community and other local stakeholders.

### *Initiation of ISSC-MAP implementation*

Much was already in place for initiation of ISSC-MAP implementation on Saraca Island in view of AVIVE's connection with the site. Training and other remedial actions to pave the way for implementation were taken, as described below:

- Initial activities on site revealed that **training of local stakeholders**, including in inventorying techniques and in development of management plans, would be necessary in order to achieve ISSC-MAP implementation over the medium term. In response, AVIVE carried out a programme to address these needs and, during the second half of the project, resource assessment and inventorying were carried out with technicians from the *Instituto Nacional de Pesquisas da Amazônia* (INPA) (National Institute of Amazon Research), the *Deutscher Entwicklungsdienst* (DED) (German Development Service) and IUCN. Community plans for annual collection and management will be based on ISSC-MAP guidance, as well as a complementary book on participatory management of non-timber forest products (NTFPs) in Amazonian communities (Machado, 2008): while ISSC-MAP's strength is that it provides a comprehensive, theoretical framework following internationally accepted certification standards, the NTFP management book was more applicable on the ground, owing to its simple language and pictorial displays.



Credit: AVIVE

Collecting Breu, *Protium* spp.,  
Comunidade São Pedro, Brazil

- ABS and TK, which are addressed by ISSC-MAP, are of major importance in Brazil, where the country's rich biodiversity has created great interest in resources from international and national

companies. As a result, the voice of indigenous communities and other traditional resource-users is louder than in many other countries. ABS and TK issues were addressed at this project site by consultants, including local experts, supporting AVIVE's needs on this in relation to ISSC-MAP implementation (see **Box 3**). Research comparing ISSC-MAP requirements with laws in Brazil relating to agriculture, the environment, health, use and trade was one of the most important products of the project and re-emphasized the implications of ISSC-MAP implementation in varying legal contexts.

### *Outcomes*

- Based on an analysis of trade and market structures, links from the project in Brazil could be strengthened with the private sector in the country. A memorandum of understanding is under development between AVIVE, IUCN and the Division of Health and Personal Care of the Brazilian natural cosmetics company BERACA, and a collaborative relationship exists between BERACA and the FairWild Foundation. These relationships should contribute both to the sustainability of BERACA's and AVIVE's plans and the plants on which they are based. BERACA has shown keen interest in future certification possibilities under FairWild, especially for Burití, Preciosa and Pau Rosa.
- Bringing together the community members and external consultants in field research and planning for ISSC-MAP implementation promoted a better mutual understanding of needs and this in turn supported the development of a model approach for ISSC-MAP implementation, based on community experience that can be replicated in Brazil and elsewhere where social, ecological and economic conditions are comparable.

#### **Box 3: The importance of Access and Benefit-sharing (ABS) and Traditional Knowledge (TK): experiences from Brazil** by *Ximena Buitrón, UICN-SUR*

The contribution to conservation from the sustainable use of biological/genetic resources and associated TK is gaining profile, although coming to a common understanding of what is "fair and equitable" is still a challenge. The need to understand the criteria for ABS, or benefit-sharing outside the context of genetic resources remains. For this project, the process of addressing Principle 4 of ISSC-MAP ("Respecting Customary Rights") entailed interviews with stakeholders and experts to get a better idea of the issue at different levels. Training needs were identified and the value of an internal policy and capacity-building on benefit-sharing and TK protection was stressed.

Local stakeholders do not have sufficient information regarding ABS and TK laws and policies to inform their decisions, although there is legal provision for ABS matters in Brazil, including recognition of TK, and experts recommend that businesses obtain clear information before beginning access, use and trade activities. It is not always that simple, however. It is often difficult to identify the owner of TK, even more so when there are several groups sharing similar knowledge. Moreover, TK is not patentable because it is not an innovative technology, but it can nonetheless be registered in Brazil, in the *Livro dos Saberes* (Book of Knowledge), according to a Brazilian ministerial decree of 2000.

## Project site 2: Cambodia—Prek Tnoat Community Protected Area



Project workers in action in Cambodia. Credit: TRAFFIC/Eanghourt Khou



Source: WWF Germany

Location of the project site in Cambodia (see asterisk)

### Background

Thousands of different plant species are used within traditional medicine practices in Cambodia and the demand for this medicine is increasing—both locally, where traditional medicine is often the only healthcare available, and in cities, where it is becoming more desirable and affordable. Demand is outstripping local supply and greater quantities of plants and plant products are being sourced from further afield. Recent overviews of the situation in Viet Nam and Cambodia undertaken by TRAFFIC (Nguyen Dao Ngoc Van and Nguyen Tap, 2008; Walston and Ashwell, 2008) emphasized the increasing threat of unsustainable gathering of wild medicinal plant resources. While in Viet Nam these resources are already heavily depleted, they are still comparatively healthy in Cambodia, although the exploitation of several medicinal plant species (e.g. *Coscinium* spp.) is already of some concern. In general, however, little is

known regarding the exploitation of medicinal plant resources in Cambodia and, as much of the human population relies to a great extent on medicinal plant resources for their livelihoods, it is important that any exploitation of these resources, particularly in the volumes commonly demanded by international trade, be sustainable. Owing to the lack of formal regulation of wild MAP harvests and trade in Cambodia, the project could not rely on an existing regulatory framework to support implementation (see **Overall findings**).

### *Identification of priority site/species*

The project began with an introductory workshop, in May 2008, with participation from stakeholders from government institutions, NGOs, research institutes and the private sector, in order to consult over the selection of a suitable project site and species. After discussion and research, Prek Tnoat Community Protected Area (CPA) on Cambodia's south-west coast was selected as the project site. It had the benefit of availability of a pre-implementation study of the MAP sector in the area, as well as



Credit: TRAFFIC/Eanghourt Khou

Site overview, Prek Tnoat Community Protected Area

a high need for resource management in the protected area and buffer zone, and strong community involvement. Furthermore, the site had year-round accessibility, a good management framework, knowledgeable communities, a reasonable population of the target species (see below), and continuity of the area with Bokor National Park (approximately 140 000 ha).

Species selected were Krakoa *Amomum ovoideum* (a herbaceous plant of the ginger family, whose fruits and seeds are collected to treat respiratory and digestive disorders) and Tepirou *Cinnamomum cambodianum* (an evergreen tree, whose bark is collected for treating stomach complaints).

### *Promoting acceptance of sustainable use of wild MAPs*

Partly because there is no national regulation of harvest and trade of wild MAPs in Cambodia, there is very little awareness with regard to the importance of sustainable collection of wild plant resources in Cambodia. The project raised awareness of its activities through broadcasts on the national television channel, Khmer Television, and reports in local and international newspapers. This built relationships with the local media that could be drawn upon in future.

Awareness of the project was also achieved through direct involvement of the local community and local consultants in the resource assessment of *Amomum ovoideum* and *Cinnamomum cambodianum*. The project team knew that the establishment of a sustainable use scheme for medicinal plants in the project area would only be successful over the long term if the communities were involved in its development, thus creating a sense of ownership, and trained in the necessary techniques; if links to markets in Phnom Penh could be established to ensure more reliable income from collection; and if a community-based management plan was developed. The community was keen to participate, because illegal collection by outsiders was a problem in the area and people were convinced that establishing community management of the resources, in co-operation with the protected area management regime, could help reduce this problem and hence result in economic benefits for the local communities.

### *Initiation of ISSC-MAP implementation*

A specific methodology was developed and implemented for resource assessment of *Amomum ovoideum* and *Cinnamomum cambodianum*. This methodology included plot techniques, datasheet design and recording techniques. Datasheets were developed to assess habitat, ecology, plant associations, population and yield of the two species. Staff of Prek Tnoat CPA were trained in resource assessment, as well as in methods of data recording, data analysis, techniques of bark collection and in the monitoring of *C. cambodianum* bark regeneration. A trade chain study of *Cinnamomum cambodianum* and *Amomum ovoideum* found that there were 29 Khmer traditional medicine shops and five Chinese traditional medicine shops at the O Reussey and Serey Pheap markets in Phnom Penh. Khmer and Chinese traditional medicine shops in the two markets were the main buyers and distributors to smaller shops, local healers and other consumers.



Credit: TRAFFIC/Eanghourt Khou

**Project staff on site in Cambodia carrying out resource assessment, 2008**



**Fruit of Krakoa *Amomum ovoideum*, a project species in Cambodia**

Training in sustainable harvest of *Amomum ovoideum* was carried out to ensure product quality and sustainability. It included techniques for harvesting fruits, drying techniques and methods to maintain seed quality, in part based on feedback on quality requirements from traders in Phnom Penh.

The community-based management plan was developed through two consultation meetings with the Prek Tnoat community, Kampot local authorities, Bokor National Park administration staff, and local NGOs. A group of nine members, including two members from each of the four villages (Chang Hoan,

Prek Tnoat, Prek Kreng and Trapeang Ropov) and a representative of the Prek Tnoat committee, was formed to focus on management.

### *Outcomes*

The project initiated the keeping of harvest records and records of trade in MAPs from the area. One of the key successes of the project was the establishment of the community-based Traditional Medicine Producer Group, the aim of which is to produce traditional medicine for sale locally, including to visitors who visit the eco-tourism site at Prek Tnoat. The Group was set up with the help of healers living in the Prek Tnoat CPA. The concepts of resource management and benefit-sharing are integrated into the Group's activities: all in the Group agreed that 90% of the total revenue generated from collection and trade from Prek Tnoat CPA would be received by them, whereas 5% would be used as a contribution to the Prek Tnoat community fund, and the remaining 5% would be allocated to the Group fund for use as needed.

The project supported market development for MAP products from the project area, linking markets for *A. ovoideum* and Chinaroot *Smilax glabra* (another species of commercial interest) from Prek Tnoat Community Protected Area to shops in Phnom Penh. One member of the community at Prek Tnoat has been encouraged to work as a trader operating between the community and shops in Phnom Penh. Market prospects were not developed during this project for *C. cambodianum*, as bark harvest should be no more often than once every five years.

If ISSC-MAP continues to be implemented after the end of the project, scaling up the model to other areas in Cambodia is conceivable.



## Project site 3: India—sites in Uttarakhand and Karnataka



Community worker with the project in Karnataka, India. Credit: C. Arpana Basappa



Location of the project sites in India (see asterisks)

### Background

Project work in India focused on two States: Uttarakhand in the Himalayan region of northern India, and Karnataka in South-west India. An important repository of wild plant species, Uttarakhand has been declared a “Herbal State” and a comprehensive plan for the conservation, development and harvesting of MAPs has been launched in the State: 14 000 ha of protected forest have been identified as Medicinal Plant Conservation Areas (MPCAs). The Western Ghats of Karnataka are also rich in diverse wild plant types and collection is commonplace. The Forest Department of Karnataka has adopted a scheme of Village Forest Committees (VFCs) under the Joint Forest Management Policy of the Government of India, whereby the benefits of resources from community forests go back to the communities themselves and the communities in turn safeguard and conserve these forests. These VFCs provided a basis for implementing ISSC-MAP guidelines in Karnataka.

## Uttarakhand

*Mandis* (storage and auction facilities run by the State Forest Department) where collectors, traders and village representatives meet to trade in MAPs, have been established by the State of Uttarakhand in Rishikesh, Tanakpur and Ramnagar, to enhance the transparency of trade. These *mandis* were starting points for the introduction of ISSC-MAP to local stakeholders. State-level meetings were held at the beginning of the project to inform policy-makers and Forest Department staff, as well as stakeholders of the trade at *mandis*. From the outset, project staff engaged regularly with key players in the trade, including the members of the State Forest Department, State government, the National Medicinal Plants Board (NMPB) of India, the Forest Development Corporation in Uttarakhand, and with the Uttarakhand Industries Association and various NGOs working in the MAP sector.

### Identification of priority sites/species



Credit: TRAFFIC/Wolfgang Kathe

The lichen *Parmelia* sp., project species in Uttarakhand

Site and species selection involved regular discussion with the Forest Department, Wildlife Institute of India (WII) and other interested parties. The taxa and sites finally selected were Jhula *Parmelia* spp., a group comprising over 30 species of lichen, around Ghat in the Chamoli District, Badrinath District, and Indian *Coleus* *Coleus* (syn. *Plectranthus*) *barbatus* in the Chamba area of the Tehri Forest Division. *Parmelia* spp. lichens are used to treat cardiac problems and bronchitis, among other ailments, and

*Coleus barbatus*, a perennial aromatic herb, is used to expel worms and to treat cuts. The project focused on *Parmelia* spp. and *Coleus barbatus* in separate phases.

### Promoting acceptance of sustainable use of wild MAPs

Lobbying for acceptance of ISSC-MAP implementation was carried out at three levels: in the field with collectors and traders, engagement at the *mandis*, and at policy level both regionally and nationally.

### *Initiation of ISSC-MAP implementation*

Project implementation in the field was commissioned to the WII, one of the most renowned academic research institutions in India. Under its auspices, a *Parmelia* resource assessment was carried out (according to a protocol developed by the WII for the Forest Department) and a comprehensive trade study of *Parmelia* spp. was developed. The trade has been rather secretive in the past, involving a large number of middlemen and a reluctance of traders to disclose information on clients or trade routes and final use of *Parmelia* spp. There is clear evidence, however, that lichens are used not only for medicine, but also as incense material for *poojas* (religious ceremonies and worship), mainly in southern India. Besides the legal trade through the *mandis*, it is also speculated that illegal trade is practised from the collection area to Nepal and probably also to Tibet. *Parmelia* is often collected by cutting the branches of pine or oak trees on which it grows, transporting them to collectors' homes and then stripping the branches of the lichen-bearing bark. Considerable work is yet necessary to achieve ISSC-MAP implementation. The harvesting patterns and structures are complex (e.g. there is a rotational system, whereby local collectors can collect in their area only once every four years), such that verification of sustainable collection of these species will be a long-term goal beyond the life of the project.

For resource assessment of the *Coleus* species, collection sites were visited and data collected on harvest and sale from *mandis*; villagers were also asked for trade information and a study of uses of and market links for *Coleus barbatus* and *Parmelia* spp. was carried out to gain a better understanding of trade dynamics for the species.

### *Outcomes*

Implementation of ISSC-MAP in Uttarakhand was most successful at a political level, managing to secure a long-term commitment to ISSC-MAP from the head of the Forest Department at provincial level, the Principal Chief Conservator of Forests of Uttarakhand, and the chief executive officer of the NMPB. Therefore, a medium- to long-term goal is to assist in mainstreaming ISSC-MAP in policy in Uttarakhand, and probably also at the federal level.

The project was also successful in promoting understanding of medicinal plant species conservation in non-governmental sectors, for example via the engagement of the Industries Association of Uttarakhand and via participation of project stakeholders in BioFach India, India's largest trade fair for organic products, in Mumbai in 2009. ISSC-MAP guidelines were tabled at national level at a meeting convened in 2008 on the incorporation of medicinal, aromatic and dye plants under the remit of the National Working Plan Code. The MAP working committee of the meeting was keen to incorporate ISSC-MAP guidelines into its plans. Institutional engagement with WII and FRLHT has ensured the ISSC-MAP vision is sustained beyond the end of the project.



Credit: Ravi Pandith

*Salacia chinensis* root, used to invigorate blood circulation



Credit: FRLHT

Community-based team, Karnataka

## Karnataka

The project in Karnataka capitalized on previous experience of the partner organization FRLHT in promoting sustainable wild plant management, and a previous project, funded by the United Nations Development Programme, contributing to the establishment of community-based resource management structures.

### Identification of priority sites/species

Two sites were selected: one in Illemanne Village Forest Area, in the Agumbe Range of Shimoga Forest Division, and another in Shiragunji Village Forest Area, in the Katgal Range of Honnavar Forest Division. Selection of species was made following a survey to determine those MAP species about which local people had the most knowledge. Species requiring interventions to achieve sustainable collection, according to the Forest Department, were then noted and, following a stakeholder meeting and technical discussion with experts from FRLHT, species selected for ISSC-MAP implementation were: at Illemanne, White Palle *Ailanthus triphysa*, harvested for its resin, and Rampatri *Myristica malabarica*, used to treat coughs, fever, sprains and sores, and, at Shiragunji, *Salacia chinensis*, the roots of which are used to treat abnormal menstruation and to invigorate blood circulation, and Babrang *Embelia tsjeriam-cottam*, harvested for its fruit.

### Promoting acceptance of sustainable use of wild MAPs

Prior links between FRLHT and the communities in the area meant that community members were already receptive to the concept of and strategies for the conservation of medicinal plants.

### Initiation of ISSC-MAP implementation

A “task team” formed as part of a previous FRLHT project, including all the stakeholders—VFC members, women’s self-help groups, collectors, traders, Forest Department officials, etc.—became the platform for implementation of ISSC-MAP at both sites. The task team, along with experts from

FRLHT and other stakeholders, brainstormed on the best method of harvest to ensure sustainability of the species and existing destructive methods were discontinued in the project area. The new “rill method” for obtaining *Ailanthus triphysa* resin (see photo, right), involving specially designed tools and a plant hormone to increase resin production, was highly successful and resulted in sustainably produced resin of exceptional quality. At the Illemanne project site, one trader was of particular importance for *Ailanthus triphysa*, because he had almost monopolized the trade in this and other species and had a well-equipped factory refining resins from trees. He agreed to co-operate with the project and support sustainable collection methods and protocols, including outside the project area, and even if the yields showed a slight reduction when using the new harvest methods.



Credit: Arpana Bassapa



Credit: Arpana Bassapa

**Conventional method of harvesting resin of *Ailanthus triphysa* (top) and FRLHT-approved method (bottom)**

Collectors were registered and trained and traceability of the product back to the source—besides being a benefit in its own right—contributed to creating a feeling of ownership among those involved in the operation. As part of the project, a study was carried out to get a clearer picture of market requirements for the target species, including quality and quantity demands. While reducing the number of middlemen in trade to secure a higher income from MAP collection for the local population, the project yet also aimed to include traders who demonstrated their interest in the project and ISSC-MAP implementation.

### Outcomes

Perhaps the greatest success of the project in Karnataka was that sustainable collection methods were introduced in combination with the establishment of community-based resource management. A 10-minute documentary was made to capture all the aspects of ISSC-MAP implementation in Karnataka and this documentary was screened at a final project workshop held at FRLHT, Bangalore, on 29 January 2010. All stakeholders were invited and dignitaries including the CEO of the Karnataka State Medicinal Plant Board attended. Feedback at the workshop was positive from both the government Forest Department and community members, and the task teams at both sites are keen to expand the application of ISSC-MAP to species other than those already selected. The contents of ISSC-MAP have also influenced the preparation of the Guidelines for Good Field Collection Practices of Medicinal Plants by NMPB (NMPB, in prep.).



Credit: TRAFFIC/Sharat Bongale

**A community workshop to promote the project in Karnataka, India, 2008**

## Project site 4: Lesotho and South Africa—several locations



Project workers in the field in Lesotho. Credit: WWF/TRAFFIC/Britta Pätzold



Lesotho and South Africa—several project sites

### Background and identification of priority sites/species

In 2003, TRAFFIC conducted an assessment of the sustainability of the harvest of the medicinal plant species Kalwerbossie *Pelargonium sidoides*, a slightly aromatic plant with velvety, heart-shaped leaves and dark reddish-purple flowers, endemic to and used traditionally in Lesotho and South Africa to treat colic, diarrhoea and other digestive disorders. Concern had been raised by the German Government because of the reportedly large scale of the trade in medicinal products derived from this species in Germany and the absence of substantive information on the short- or long-term sustainability of the industry. The results of the assessment indicated that, although the trade did not imminently threaten *P. sidoides*, the species was under potential longer term threat owing to the very slow re-growth of root material left in the ground by harvesters and the danger of complete root removal as a result of unmanaged follow-up harvesting. During 2005, TRAFFIC was approached

by the Government of Lesotho to assist in building capacity within their CITES Management and Scientific Authorities. During a needs assessment for the training programme, the existence of an unregulated and undocumented *P. sidoides* industry in Lesotho was revealed, while other sources reported illegal harvesting of the species from protected areas within South Africa. As a result, TRAFFIC and the National Environmental Secretariat of Lesotho agreed that the practical fieldwork component of the training course should focus on research in relation to making an NDF for *P. sidoides*. TRAFFIC was further requested to facilitate collaboration between government regulators in South Africa and Lesotho and other stakeholders to ensure sustainability of the industry. Project sites comprised all regions of Lesotho where the species occurs and adjacent areas of South Africa.

### *Promoting acceptance of sustainable use of wild MAPs*

Research associated with making an NDF is described in **Box 4**. Biological, legislative, institutional and socio-economic issues causing conservation management bottlenecks for *Pelargonium sidoides* were highlighted along with possible solutions. The results of the NDF exercise were communicated to delegates at the World Congress on Medicinal and Aromatic Plants (WOCMAP) in Cape Town in November 2008 and discussed by the CITES Plants Committee (CITES, 2009). The WOCMAP meeting was a good platform to present ISSC-MAP and its relevance for *P. sidoides* and other MAPs. In addition, TRAFFIC was invited to participate in the Pelargonium Working Group, a group set up in South Africa to further sustainable use of *P. sidoides*, and this provided an additional opportunity to promote ISSC-MAP, including to the medicinals industry.



Credit: WWF/TRAFFIC/Britta Pätzold



Credit: WWF/TRAFFIC/Britta Pätzold

### *Initiation of ISSC-MAP implementation*

Activities focused more specifically on implementation of ISSC-MAP included development of an integrated management plan for *Pelargonium sidoides* for Lesotho and South Africa, following the structure laid out in the South African *National Environmental Management: Biodiversity Act*. The plan (the “Biodiversity Management Plan for *Pelargonium sidoides*” (BMP)) included the results of the NDF and the results of extensive consultations with industry,



Credit: WWF/TRAFFIC/Britta Pätzold

**Project staff at work in Lesotho**

harvester communities and government personnel in Lesotho and South Africa. The finalized plan will be submitted to the Governments of Lesotho and South African for formal implementation through their respective legal frameworks and through TRAFFIC projects currently being developed. In this context, it was discovered that Lesotho's environmental legislation was highly fragmented and would not allow the BMP to be implemented easily or smoothly. In recognition of this shortcoming, TRAFFIC is working with IUCN on a legislation review that will provide recommendations to the Government of Lesotho on how to rationalize environmental laws for the effective implementation of CITES, CBD (and ABS and TK), and the *P. sidoides* management plan. Full and long-term implementation of the BMP will take several years and responsibility for further implementation is now with the Governments of Lesotho and South Africa.

**Box 4: Use of ISSC-MAP as a tool for the CITES Non-detriment Finding Process, by David Newton, TRAFFIC**

Because of its specific trade focus, *A Checklist for Making Non-detriment Findings—Guidance for CITES Scientific Authorities* (Rosser and Haywood, 2002) was found insufficient for identifying the requisite background information for the Biodiversity Management Plan (BMP) for *Pelargonium sidoides*. However, these NDF guidelines have much in common with specific principles and criteria of ISSC-MAP. Consequently, during the NDF process for *P. sidoides*, these guidelines and ISSC-MAP criteria were applied jointly and used to document available knowledge and identify field-research and data-collection priorities for the species. This enabled the compilation of an NDF in ISSC-MAP format, with the advantage that the scientific data gathered during the NDF could simply be incorporated into the structure of the ISSC-MAP-based BMP. This manner of making an NDF was presented at the International Expert Workshop on Non-Detriment Findings in Mexico, 2008, and the presentation “Development of a Non-Detriment Finding (NDF) process for *Pelargonium sidoides* in Lesotho” is available at: <http://www.fairwild.org/publication-downloads/other-documents/NDF-workshop-case-study-Lesotho.pdf>.

Initiation of scientific background work required to develop sound harvest protocols comprised a further element of ISSC-MAP implementation during the project. In this connection, one of the main questions that still needs answering is the rate of ligno-tuber recovery of *Pelargonium sidoides*: a two-year research study is being carried out with the support of the National University of Lesotho, Witwatersrand University in South Africa, and TRAFFIC to this end.

### *Outcomes*

Through developing an ISSC-MAP-based harvesting and management strategy, the project in Lesotho is expected to contribute substantially to improving the livelihoods of local communities through the provision of a better quality, reliable supply of raw material.



## Project site 5: Nepal—Kangchenjunga Conservation Area and Langtang National Park Buffer Zone.



Project community meeting, Langtang National Park, Nepal. Credit: Indu Bikal Sapkota



Location of the project sites in Nepal (see asterisks)

### Background

Nepal is one of the countries with the highest biodiversity in the world, the diversity of its flora and habitats being almost unrivalled. However, many regions in Nepal suffer from severe threats to their biodiversity as a result of human pressure. Populations of many medicinal plant species have been heavily depleted over recent decades to accommodate both the high level of traditional medicinal plant use in the country and the increasing demand from international trade. Economically, medicinal plants are among Nepal's most important commodities in trade. This project in Nepal focused in and around protected areas, where potential conflict between the economic needs of the local population and conservation interests is particularly evident. It aimed to harmonize the structures of the existing community-based management systems with ISSC-MAP principles and criteria and national guidance on wild collection of NTFPs (Ghimire and Nepal, 2007).

## Identification of priority sites/species

The selection of sites and species was based on a comprehensive, formal situation analysis carried out by WWF Nepal, which has been managing a number of MAP conservation projects in the country for the past two decades (Oli and Nepal, 2003), and can therefore draw on internal experts and a vast nationwide network of stakeholders in the MAP sector.



**Habitat for wild medicinal and aromatic plants harvested by the project staff in Nepal**

Two sites were chosen to implement ISSC-MAP in Nepal: Kangchenjunga Conservation Area (KCA) and Langtang National Park Buffer Zone (LNPBZ). KCA is located between two protected areas—Makalu Barun National Park-Buffer Zone of Nepal and Kanchendzonga National Park of India, thus having conservation significance in a transboundary context, and at regional level.

The species selection process at both sites used a participatory approach and resulted in selection of one species in each site—Chiraito *Swertia chirayita* in LNPBZ and Kutki *Neopicrorhiza scrophulariiflora* in KCA. Both are very prominent MAP species, in high demand, and the conservation status of both is declining, mostly due to overharvesting in the past. Chiraito grows at altitudes between 1000 and 3000 m and bears greenish-yellow flowers. Its seeds are used by local people in treating coughs and colds and the juice of its leaves and stem in treating malarial fever in some parts of Nepal. Chiraito is mainly threatened by high market demand, enrichment plantations within the community forests to grow timber species such as pine, unsustainable collection for national and international trade, and overgrazing. Kutki is a perennial rhizomatous herb with purple flowers, typically found in the high pastures and alpine meadows between 3000 and 6000 m. Remote communities can benefit from harvesting and managing it sustainably in the wild, but it is threatened by high demand for international and domestic trade. A ban on harvesting this species has been lifted by the Government of Nepal, but wild harvesting and trade are only allowed after taxonomic identification and confirmation as *N. scrophulariiflora* by the Department of Plant Resources and, in addition, a final approval of the Department of Forests after a species inventory and identification of its total natural and harvestable stock in the wild.

A study of trade in the two selected species identified market opportunities; market actors; processing options for local value-adding and prospects for developing strategies for high-value addition and increasing income for local producers; and capacity-building offers from business service providers. Signing a memorandum of understanding with a large national and international MAP trader was a first promising step towards the establishment of business links.

## *Promoting acceptance of sustainable use of wild MAPs*

The project was highly successful in its promotion of ISSC-MAP and the project field operations, at various levels. Local groups were encouraged to participate actively in the implementation of the ISSC-MAP through inception, information and training workshops in the communities around the two selected sites. WWF Nepal carried out large-scale national-level promotion through continuous meetings with stakeholders at the political level, newspaper articles, local and national radio broadcasts and through the production of a documentary film on sustainable NTFP-harvesting and ISSC-MAP, *Natural Herbs—Treasures of the Himalayas*, that was broadcast on national TV and shown at national-level workshops; the film had a considerable awareness-raising impact. The documentary was produced after intensive field visits in KCA and LNPBZ, interviews with the concerned stakeholders and a literature review.

## *Initiation of ISSC-MAP implementation*

The project endeavoured to build capacity among local communities, collectors and traders to ensure a sustainable, steady supply of high quality products and to make sure that the ISSC-MAP criteria were understood and to try and ensure their application would be effective over the long term. Close co-operation with government agencies and other authorities, both local and national, formed a central part of the project in order to develop, streamline and/or adapt appropriate policies.

For both species, a resource assessment was carried out following the ISSC-MAP guidance, adapting it where necessary. Based on this resource assessment and the existing community-based management structures, management plans for the two selected species were developed by a consultant scientist in co-operation with the local stakeholders and WWF Nepal. The management plan was harmonized with existing guidelines and the ISSC-MAP indicators were adapted to the local conditions.

## *Outcomes*

The project in Nepal provides documented experience of a process of adapting ISSC-MAP to existing community management structures, which may be useful to other projects that plan to implement ISSC-MAP.

With ISSC-MAP, a system is now available that can be used by the relevant authorities to deliver on the requirements that precede the issuing of a collection permit. Strict measures like a collection ban could be avoided, if authorities adopted ISSC-MAP as a requirement for wild collection. *Neopicrorhiza schrophulariiflora* is closely related to *Picrorhiza kurrooa*, which is listed in CITES Appendix II and both species are traded under the same name (Kutki).

## Project site 6: South-east Europe and Bosnia and Herzegovina— Vlasenica region



Wild Garlic *Allium ursinum* harvest in the project area, Bosnia and Herzegovina. Credit: Sladjana Bundalo



Source: WWF Germany

Location of the project site in Bosnia and Herzegovina (see asterisk)

### Background

South-east Europe is the continent's most important source region for MAPs collected from the wild (Lange, 1998 and 2006, and Kathe *et al.*, 2003). The economic, political and structural changes induced by the disintegration of the Soviet Union and by the collapse of the former Yugoslavia in the 1990s are still having considerable influence on wild MAP collection in the region. It has dropped sharply in countries such as Poland, Hungary and Croatia, often being replaced by MAP cultivation. In other countries, such as Albania, Bosnia and Herzegovina, Bulgaria and Romania, there are still many wild-collection organizations and considerable volumes of plants are collected every year, but the number of available (and knowledgeable) collectors is decreasing, as more lucrative options for earning a living are now available. Hence, the future of wild collection is uncertain in almost all countries in the region and

collection operations are often not sustainable because of factors such as the lack of long-term prospects, low prices paid for the raw material, lack of proper regulation, and overharvesting of some commercially important MAP species.

Besides the project (co-ordinated by WWF and TRAFFIC) setting out to establish a sustainable harvesting scheme for the collection of Wild Garlic *Allium ursinum* in the Vlasenica region of Bosnia and Herzegovina, sustainable wild MAP collection in the region of south-eastern Europe was additionally promoted through communications and advocacy activities co-ordinated by TRAFFIC; see **Box 5**.

### *Identification of priority site/species*

*Allium ursinum*, used to aid digestion, for circulatory disorders, and as an ingredient in culinary dishes, was selected as a target species for a number of reasons. While other ISSC-MAP projects focused on species of conservation concern, *A. ursinum* is a very common species in eastern Bosnia and Herzegovina. The main aim of this project was to show the applicability of ISSC-MAP in a model context for the region, that could then be used for wider promotion of the



Credit: TRAFFIC/Stajana Bundalo

**Harvesting Wild Garlic *Allium ursinum* in the Vlasenica region of Bosnia and Herzegovina in 2008**

Standard. Moreover, collection of *A. ursinum* has increased dramatically in recent years owing to high demand on international markets and although the population is not endangered by current collection levels, lack of resource management in the region poses a potential threat to populations of MAP species. Collection of the species, on the other hand, is well organized by companies in charge of harvest and trade, some of whom were involved during the ISSC-MAP development phase and also manage harvest and trade in accordance with the fair trade criteria of the FairWild Standard. Certification is a possible future option for the collection of *A. ursinum* in Bosnia and Herzegovina. Site selection was determined by availability of locations in Vlasenica for which permission to test implementation of ISSC-MAP was granted by the local forest authority.

### *Promoting acceptance of sustainable use of wild MAPs*

The project in Bosnia and Herzegovina ran workshops on sustainable MAP collection to foster acceptance among stakeholders and encouraged governmental officials to recognize ISSC-MAP as a

### **Box 5: Promotion and advocacy activities in south-east Europe**

ISSC-MAP advocacy activities carried out in south-east Europe aimed to establish an inter-disciplinary expert network as a basis for long-term activities in the region. Work included presentations at conferences (e.g. the International Symposium on Breeding Research on Medicinal and Aromatic Plants in 2009 and Biodiversity Conservation and Use of Genetic Resources conference in Ljubljana, Slovenia) and meetings with potential strategic partners for FairWild implementation (e.g. the FAO Sub-regional Office for Central and Eastern Europe (Forestry team); the Association of MAP Companies in Hungary; the IUCN office in Belgrade; the Ministry of Agriculture of Hungary (Department of Medicinal and Aromatic Plants); the Research Institute of Agriculture Studies of Hungary; and the Chamber of Agriculture and Forestry of Slovenia).

useful tool to ensure sustainability of resource harvest. The regional forest authority supported, indeed actively participated in, the resource assessment and the development of a management plan. Good co-operation with forestry authorities in Bosnia and Herzegovina is among the most important prerequisites for successful ISSC-MAP implementation in the country. Project staff were invited to contribute to the development of the “book of rules” for NTFP collection, part of forest law in Republica Srpska (one of two entities making up Bosnia and Herzegovina), which was adopted (with significantly stronger sustainability criteria) in December 2009. A legal advisor was engaged to provide suggestions and comments and indicate

potential ISSC-MAP aspects and provisions that could be proposed for consideration during finalization of the legislation.



Credit: TRAFFIC/Sladjana Bundalo

**Sacks of Wild Garlic *Allium ursinum* ready for transportation from the collection site in Vlasenica, Bosnia and Herzegovina**

### *Initiation of ISSC-MAP implementation*

Information collected during the situation analysis was obtained from collectors and other stakeholders and included details on management practices in the region, trade channels, prices of raw material and processing. The data obtained during the assessment were used for sustainable management planning during workshops, with the participation of all relevant local stakeholders from the whole Vlasenica region.

## Outcomes

The management plan drafting process was completed in late 2009 and the result was the Vlasenica *Allium ursinum* Management Plan (VAMP), developed to guide sustainable collection practices for the species in the region in accordance with ISSC-MAP. Its long-term goal is sustainable use of the species for commercial purposes, in the context of the needs and rights of all stakeholders and



**Bosnia and Herzegovina project stakeholders in Vlasenica, April 2009**

local communities that depend on the resource. In order to achieve this goal, specific management activities must be undertaken, including:

- the improvement of collection practices through training;
- the adaptation of licensing procedures;
- more effective supervision of collection to prevent illegal harvesting;
- development and implementation of a continuous monitoring system.

The local forest authority, as the body responsible for managing the *Allium ursinum* resource, will be in charge of implementing the principles and components of the VAMP. The company Elmar d.o.o. has been selected as a partner for implementation owing to its long-standing interest in implementation of sustainable management of the resource and because it is one of three main traders of *A. ursinum* species in the region.

Companies in the MAP sector and State authorities welcomed the approach of this project and have shown interest in scaling it up to species that are of concern in the region, for example Yellow Gentian *Gentiana lutea*, Smilje or Imortelle *Helichrysum italicum* and Bearberry *Arctostaphylos uva-ursi*. In order to nurture continuity of ISSC-MAP implementation in Bosnia and Herzegovina, important regional and national players, including the FAO Central European office and the Fostering Agricultural Markets Activity (FARMA) project of the United States Agency for International Development (USAID) and Swedish International Development Agency (SIDA), were introduced to the FairWild Standard. A regional workshop on institutional needs for the wild-collection sector is scheduled for 2010 in Bosnia and Herzegovina.

## Overall findings regarding ISSC-MAP as a tool

### *ISSC-MAP is applicable in a range of situations*

ISSC-MAP proved to be sufficiently versatile for application in diverse settings, as originally intended. As **Table 1** shows, the project sites covered a range of characteristics between them and ISSC-MAP was applied successfully on both community and State land. Private companies, government forest authorities, other key government regulatory bodies and collectors all showed keen interest in implementing ISSC-MAP. Project documentation and other material was produced for different levels of use, with some outputs using language almost consistent with legal language and other documentation more suitable for practical use in the field.

**Table 1**

#### Details of implementation contexts at project sites

Implementation with:	BA	LE/ZA	NP	IN-UL	IN-KA	BR	KH
State controlled resource	X	X	X	X	X	X	
Private sector/business links	X	X		X	X	X	X
Local NGO as driver			X		X	X	X
Protected area context			X				X
Links to regulatory needs	X	X		X			X
Community-managed resource			X		X	X	X

**Key:** BA: Bosnia and Herzegovina; LE: Lesotho; ZA: South Africa; NP: Nepal; IN-UL: India, Uttarakhand; IN-KA: India, Karnataka; BR: Brazil; KH: Cambodia.

Success for ISSC-MAP implementation extended beyond project countries (see also reference to Cameroon in *ISSC-MAP supports regulatory processes*) and pick-up in China may be noted in this context. Continuous exchange of experiences between this project and a project named “Sustainable Management of Traditional Medicinal Plants in High-biodiversity Landscapes of Upper Yangtze Ecoregion”, jointly run by WWF-China, IUCN and TRAFFIC and funded by the EU-China Biodiversity Programme (ECBP), mutually benefited both projects and led to the application of ISSC-MAP in China. A breakthrough has been the setting up of alliances with carefully selected businesses receptive to best-practice frameworks for scaling up community-based resource management (initially of wild-harvested Southern Schisandra *Schisandra sphenanthera*) around Giant Panda landscapes. Partnerships have been developed to enhance the opportunities for small-scale producers, enabling business, local government and producers to work together in a multi stakeholder process, making project results significant at an international level in terms of providing a working model for incentive-based conservation in landscapes outside protected areas.



## ***ISSC-MAP supports regulatory processes***

In some project countries, for example Cambodia and Bosnia and Herzegovina, State regulations governing MAP use are relatively under-developed. In such cases, ISSC MAP can provide the basis for the development of regulations to support sustainable use of MAP resources, as has been mentioned. In other cases, ISSC-MAP provides a yardstick for comparison with national laws, in order to throw light on insufficiencies. Some examples of each type of situation follow.

State regulation of MAPs in **Cambodia** is poorly developed. National laws and relevant policies apply a broad-brush approach to natural resource management issues and many of the regulations seem to be isolated from each other, resulting in a blurred, often self-contradictory body of legislation that leads to confusion and poor enforcement. To serve long-term MAP management in Cambodia, legislation and policy need to become more rigorous and also to relate to international conventions and best-practice guidelines. ISSC-MAP is able to provide support for the development of such legislation by its setting-out of essential elements related to the harvesting of wild collected plants.

In **Bosnia and Herzegovina**, detailed provisions for MAP trade are lacking, leading to ineffective implementation of legislation. TK and practice regarding MAPs in Bosnia and Herzegovina are abundant, however, and this needs to be recognized and addressed by the country's regulatory system. In this regard, the Republika Srpska (RS) Rulebook on the Methods of Collection of Non-timber Forest Products, to which TRAFFIC contributed and whose articles are based on ISSC-MAP principles and criteria, will help. It includes information on the development of management plans, licensing procedures, the maintaining of wild MAP resources, baseline resource assessments, training of collectors, respect for customary rights, fair business practices, etc. Steps were taken to ensure that the Rulebook was not in conflict with existing State legislation. Proposed amendments are currently awaiting approval by the Government.

In contrast to the case in Cambodia and Bosnia and Herzegovina, the regulatory system for MAP use in **India** is well developed. However, several policies and implementation procedures at national and regional levels seem to require revision and the ISSC-MAP process can provide clear input towards this. Traditional use of medicinal plants is widespread, but it is the commercial use of MAPs that requires regular checks in order to ensure the sustainability of the harvesting of wild plants. This is particularly true for Uttarakhand, positioning itself as a "Herbal State" and leading on progressive approaches to cultivation and marketing of MAPs. Improvements are needed, however, in the training of collectors; in regulating issuance of collection permits; in assessment of available MAP natural resources; in support for the local community as a priority; and in the raising of awareness regarding the importance of sustainable wild harvesting.



Wild Garlic *Allium ursinum*

Triggered through awareness-raising activities at international level, as a spin-off success of this project, perhaps one of the most advanced applications of ISSC-MAP to State regulations has been with regard to CITES-listed African Cherry *Prunus africana* in **Cameroon**. In 2008, after the initial development of regional FAO guidelines on the issuance of permits for NTFP collection (based on ISSC-MAP guidelines (FAO *et al.*, 2008)), a CITES workshop on *P. africana* identified ISSC-MAP as a suitable tool for identifying priorities for action in the development of a national management plan for *P. africana* for Cameroon (Ingram *et al.*, 2009). It is hoped that eventual application of ISSC-MAP will provide Cameroon with the means to re-establish trade in *P. africana* based on sustainable grounds.

Since the lifting of the ban on Kutki collection in **Nepal**, ISSC-MAP has supported national regulations by providing a credible tool for sustainable harvesting. Combined with technical assistance to stakeholders, it has promoted government regulations favourable to wild collection, rather than restrictive. This approach could be applied to several MAP species for which collection is prohibited, in most cases because relevant information on their ecology and harvest levels is not available.

### ***ISSC-MAP contributes to internationally agreed development goals***

Forest authorities in several locations welcomed ISSC-MAP as a tool for community-based management schemes, as it boosted empowerment to manage MAP resources and habitats sustainably. This in turn supported national governments' efforts to implement the CBD and respective National Biodiversity Action Plans and the GSPC, as well as demonstrating efforts towards achievement of MDGs, for example Goals 1 and 7, concerning poverty eradication and environmental sustainability, respectively. MAPs are an excellent commodity on which to focus in terms of supporting achievement of the MDGs, as they can link advances in conservation, supply of medicinal products, and local livelihoods in a clearly understood way—providing MAPs are sourced and traded sustainably. To show that ISSC-MAP works well as a tool to foster these advances has been one of the grandest successes of the project at an international level.

ISSC-MAP proved to be a useful tool to support delivery of the goals of other international agreements, for example CITES NDFs or the WHO “[Updated] Guidelines on the Conservation of Medicinal Plants” (in prep.), and was presented at the following international and inter-governmental fora, to convey its contribution to international discussions on sustainable use of biodiversity and related TK and international trade: IUCN’s World Conservation Congress (Barcelona, 2008); the International Expert Workshop on CITES Non-Detriment Findings (Cancún, Mexico, 2008); CBD CoP 9 (Bonn, 2008); the International Conclave on Medicinal Plants for ASEAN and Bay of Bengal Initiative for Multi-sectoral Technical and Economic Co-operation (BIMSTEC) countries, held in Imphal, Manipur (India), in 2008; the 10th and 11th Governing Council intersessional meetings of the South Asia Co-operative Environment Programme (2008); WOCMAP (Cape Town, 2008); and the World Forest Conservation Congress (Buenos Aires, 2009).

### ***ISSC-MAP can support certification processes***

While formalized certification of sustainable resource management and trade is not relevant in all contexts, e.g. where there is no market for the certified products, the incorporation of ISSC-MAP as part of the FairWild Standard offers a certification option for ISSC-MAP via the FairWild Label. Voluntary codes of practice notwithstanding, such certification can be of great interest to companies wanting to communicate sustainable sourcing practices to consumers. In order to trigger discussion and co-operation with the private sector, FairWild presented itself at several trade shows, among them BioFach 2009 and 2010 in Nürnberg, Germany, one of the world’s largest organic trade shows with about 45 000 visitors, and BioFach 2009 in Mumbai, India. Funds provided through this project and via other donors allowed the participation of representatives of five of the project’s regional field operations at BioFach 2009 in Germany, and presentation of the FairWild Foundation at BioFach 2010. This allowed project staff to provide first-hand information to potential clients, triggering strong interest from companies, certification bodies, government aid agencies, NGOs and journalists from more than 20 countries.



*Credit: TRAFIC/Anastasiya Timoshyna*

**ISSC-MAP and FairWild on show at BioFach 2009, Germany**

## Lessons learned from country field projects

### *General lessons*

In spite of the differences between field projects, a number of “lessons learned” have been reported by all projects, including some related to the overall project findings noted above.

- ISSC-MAP and accompanying guidance documents are valuable and useful tools to support the establishment of sustainable harvesting and management regimes for a range of MAP species, in a range of different scenarios (see **Table 1**).
- Participatory approaches to resource assessment, monitoring, adaptation of framework documents and management planning are the main key to success and necessary to obtain buy-in from all stakeholders. However, they require long-term investment.
- It was sometimes felt there was a need for adaptation of the Standard documents: it should be discussed how far local adaptations are permissible.
- Further guidance on certain aspects of ISSC-MAP implementation would have been very useful to implementers in the field, especially on topics that required in-depth background knowledge, such as ABS and TK, underlining the value of a combination of international and local expertise and input.
- Reliable business links (at local, national or international level) are often crucial for project success. Businesses demanding a sustainably sourced product translate into a substantial force for convincing local stakeholders of the worth of implementing a sustainability standard.
- International co-ordination and support is needed (in this case provided through the ISSC-MAP Secretariat), as trade is often organized internationally and can therefore have effects in other regions—not all important players are located in the source countries. For example, advocacy within relevant political frameworks, such as the CBD, complements efforts on the ground.
- A combination of model cases on the ground with promotion and targeted awareness-raising actions at local, national and international level helps stakeholders to understand the approach used and to convince them that ISSC-MAP is an excellent working tool, thereby creating the enabling environment for sustainable MAP use.
- Strong and well-established partner organizations and a network of experts in the region are prerequisites for long-term success, especially with a short-term project.
- It is important to link application of ISSC-MAP to relevant local/national schemes on resource management.
- A “common language” is not to be underestimated as a factor for successful project implementation. In most regional situations, this meant that documentation (including the Standard itself) had to be translated into the national or local languages and other communications had to be made in the same language(s). Besides its more usual meaning, “common language” also refers here to the way in

which communication was adapted to what could be understood by those ultimately implementing ISSC-MAP. The sometimes rather theoretically worded, complex provisions of a standard such as ISSC-MAP need to be transformed into ideas that are closer to the ground and can be more easily understood. A good example is a book (Machado, 2008) compiled by a project partner in Brazil (see **Project site 1: Brazil**), which communicates not only in words but also in drawings and pictograms. While this probably cannot be envisaged for ISSC-MAP itself, it may be an option for guidance documentation.

- Lastly, time constraints were often a challenge, especially, as noted, in so far as the need for patient and careful work to bring stakeholders on board was concerned, but also for pre-assessments tackling, for example, analysis of how existing official management plans related to ISSC-MAP, or how to deal with a lack of such plans. Time constraints were the more challenging in a project with field work based on natural cycles and related intervals between growing, flowering, fruiting and harvesting periods.

## **Specific lessons**

The diversity of regional projects resulted in a very interesting spectrum of lessons learned peculiar to the site of project implementation.

In **Brazil**, ABS and TK issues are of particular importance. Establishment of ABS and TK agreements is a major challenge, above all because there is confusion about what this would entail and international dispute about what would or would not be acceptable. This issue was attended to closely by the project in Brazil (and will continue to be so after the end of the project's lifetime), and findings could provide a good model for other operations for which ABS and TK considerations were of relevance. In short, the lesson learned was that analysis of legal situations can require local expertise from several institutions.

In **Cambodia**, the main lesson learned was that other factors at work at the site needed to be taken into account in order to convince the collectors and villagers to embark on ISSC-MAP implementation. In this case, uncontrolled harvesting by outsiders was a considerable problem. However, ISSC-MAP implementation and the establishment of related management structures contributed to: 1) a feeling of ownership of and responsibility for the MAP resources among the local population; 2) monitoring and surveillance activities that allowed calculation of the real impact of outsider harvesting and that helped prevent outsiders from entering the area for



Credit: TRAFFIC/Eanghour Khou

**Tepirou *Cinnamomum cambodianum*** a project species in Cambodia, exploited for its medicinal bark



Harvesting on site in Cambodia

harvesting. A second important lesson was that market analysis and the establishment of trade links were crucial to give a long-term perspective to the collectors and their families, so that they could increase their livelihoods by better resource management in combination with more reliable market access.

In **India**, there was a particular lesson relating to site selection. While the project in Karnataka had the advantage that site selection was easy because FRLHT could follow up on a

previously established project and the management structures that had already been developed, the Uttarakhand project needed to start from point zero. Owing to site remoteness and restricted accessibility, project initiation and implementation in the field took a very long time and needed much longer than the two years available for full development of ISSC-MAP implementation.

The **Lesotho/South Africa** project demonstrated that ISSC-MAP worked well as a tool for the CITES NDF process and for South Africa the project outcomes provided very valuable guidance for discussions of the Pelargonium Working Group but, as the project necessarily included related scientific research, it exceeded the timeframe available and needed to access additional funds. This relates to the general lesson learned on time constraints.

In **Nepal**, the importance of networking and public relations was a particular aspect, resulting in a specific positive lesson learned. WWF Nepal is one of the few conservation NGOs with a history of continuous medicinal plant conservation work (spanning over two decades). During this time, the organization has not only built up its own capacity in the MAP sector but also established an enormous network of partners in Nepal, from the government through to community forest-user groups. This network, in combination with good media contacts, a professional PR department and additional funds, enabled the development and dissemination of ISSC-MAP promotional materials through high-level conferences, TV and radio broadcasting, and newspapers. These activities had a powerful advocacy effect nationwide.

In **Bosnia and Herzegovina**, key lessons learned were based on two factors: (i) the fact that collection is often not performed by local communities but by “professionals” hired by a company that operates as a MAP trader; (ii) ISSC-MAP implementation depends on the willingness and co-operation of the regional forest authority, the body responsible for giving permission to carry out activities such as resource assessment, on which ISSC-MAP implementation is based. As a consequence of these

conditions, ISSC-MAP implementation in Bosnia and Herzegovina could only be successful if (i) collectors benefited directly financially from implementing sustainable harvesting methods and (ii) there was a good relationship with the forest authority. The former would require supervision of collection practices through the collection and trading company.

## **CONCLUSIONS**

The project's main objectives—to develop sustainable use schemes for chosen project species; to enhance and initiate local capacity to implement these; and to increase acceptance of approaches to sustainable collection of wild MAPs at local and national level—were met in each of the project countries. There was variation in the means by which these objectives were met, and variation in the level to which each was developed, reflecting a diversity of contexts, which was a strength of the project inherent in the design from the outset. Beyond foreseen differences, unanticipated variables and developments further tested the robustness of ISSC-MAP. That the project nonetheless concluded with a model approach for resource management and an enabling environment created at all except one project site testifies to the Standard's workability. This is not to discount challenges encountered in putting the project into action and maintaining its progress, from temporary site inaccessibility, to legal complexities relating to ABS and TK. However, these obstacles provided experiences to inform future efforts.

The project demonstrated the importance of local conditions for implementation of ISSC-MAP, that they need to be analysed case by case, that there is often a need to involve players from several constituencies, and that this requires considerable time, networking and funding. Further, sustainability must be built into the field projects themselves. While the question of whether this was achieved via this project cannot be answered, given the relatively short time frame, the setting up of functioning local or national management of wild plants for the future, combined with wider awareness of the value of sustainable use approaches as outlined in ISSC-MAP and, crucially, partnerships with government bodies, scientific institutions and the private sector were all achieved and constitute an encouraging basis from which to develop.

Most plant species that were the focus of this project are either known or suspected to be unsustainably harvested. In demonstrating a range of promising outcomes for ISSC-MAP, the "Savings Plants that Save Lives and Livelihoods" project has taken a necessary and useful step in bridging the gap between words and action to manage wild plants for the future of humankind.

## RECOMMENDATIONS

This report was written primarily to provide individuals and organizations concerned with improving rural livelihoods with a benchmark for the workability of sustainable collection of wild plants, in support of livelihoods and species diversity. As a recent WWF report put it, “the principles of sustainable use and benefit sharing embodied in the MDGs and the CBD are mutually supportive, but the challenge lies in the implementation; particularly using the inter-linkages between biodiversity and people for the benefit of both” (WWF, 2006). Recommendations below stem from experiences from the project and are offered here to provide a basis for building on its successes and an awareness of the obstacles it encountered.

**Governance.** Agencies considering promoting sustainable wild plant collection should acquire a thorough understanding of the legal context within which they will be operating, in order to work in concert with it. In settings where laws governing collection and management of wild plants are found to be in need of updating or otherwise improving, legislators should consider using ISSC-MAP principles as a guide to revision of such laws. In this way, they would simultaneously achieve synergy with goals of international environmental agreements such as the Convention on Biological Diversity (CBD). In contexts where legislation specific to wild plants is absent, legislators should consider mainstreaming ISSC-MAP into national and/or local law.

**Partnership.** Ensuring community participation in collection and management of local wild plants according to sustainable principles increases the chance that such collection will be sustainable. **Agencies establishing projects for sustainable wild plant collection should engage local stakeholders, for example businesses, local collectors, and local organizations with experience in the field, in partnership, including by identifying clear and realistic market openings for harvested products.**

**Project documentation.** In many locations with a strong tradition of organized collection of wild plants there can be a wealth of knowledge on wild plants that is not necessarily written down. **Project staff engaged in management of harvest of wild plants should take care to ensure that documentation available to support schemes is appropriate to local needs.**

**Training.** Projects on sustainable wild plant collection should factor in ample time and funds for capacity-building and training of local project workers in resource assessment, harvest monitoring, collection and processing techniques, protection of their traditional knowledge, and benefit-sharing.



**Project time span.** Community buy-in to the ISSC-MAP approach and principles was found to be fundamental to the workability of the Standard in practice. Especially in the light of the two preceding recommendations on project documentation and training, but also in view of the time taken for other aspects of project implementation, such as co-operation with government authorities, **project managers aiming for sustainable wild plant collection should adopt a long-term perspective in order to allow time to support projects through to stability.**

**Certification.** Certification of ISSC-MAP via the FairWild Standard is a development that provides the basis for credibility in commercial labels claiming sustainability of wild harvest. However, certification can be costly for producers and requires strong links between producers and consumers, as well as consumer awareness of sustainability concerns. **Project managers, governments, NGOs and others involved in sustainable collection of wild plants should evaluate on a case-by-case basis whether certification is the best option for reinforcing sustainability.**

**International co-ordination.** The current project benefited from centralized and fully funded co-ordination and standardization of efforts on the ground, including to support compliance and promote relevance to inter-governmental conservation development frameworks, such as the CBD. **Similar projects should take care to install oversight at this higher level.**

**Research.** All plant species in this project had acknowledged medicinal applications. Similarly, almost all the chosen species were of conservation concern at some level. A great deal of basic botanical knowledge/research is essential to develop approaches for sustainable management and wild collection. For many species basic information about distribution, population trends, regeneration, and response to threats such as climate change is lacking. Therefore, **scientists and individuals with appropriate local knowledge should consider prioritizing research on plant species for which sustainability of wild harvest is a major concern, to safeguard species important for health and livelihoods.**

**Initiation of a value-adding strategy and market development.** In view of the relatively limited value of much raw plant material, sustainable livelihoods benefit from the means to add value at the local level, for example by processing plant material into a more finished product for sale. However a value-adding strategy brings local sustainable benefits only when combined with a sustainable harvest strategy. **Development agencies involved in projects adding value to raw plant material should also support capacity-building and tools for resource management.**

## REFERENCES

- Allegretti, M.H. (1987). Reservas Extrativistas: uma proposta de desenvolvimento da floresta amazônica. Instituto de Estudos Amazônicos, Curitiba, Brazil.
- Anon. (1988). Declaration of the International Conference on Medicinal Plants, held in Bangalore, India, 16–19 February 1988. Viewed at <http://www.bgci.org/worldwide/article/132/>, March 2010.
- CBD (1992). Convention on Biological Diversity (with Annexes). Concluded at Rio de Janeiro on 5 June 1992. No. 30613. Viewed at [www.cbd.int/doc/legal/cbd-un-en.pdf](http://www.cbd.int/doc/legal/cbd-un-en.pdf), 23 April 2010.
- CBD (2002). Global Strategy for Plant Conservation. Secretariat of the Convention on Biological Diversity. Montreal, Canada. Viewed at <https://www.cbd.int/doc/publications/pc-brochure-en.pdf>, 23 April 2010.
- CITES (2009). Development of Principles, criteria and indicators for the making of non-detriment findings—The Principle Level. 18<sup>th</sup> Meeting of the Plants Committee, Buenos Aires, 17–21 March 2009. Viewed at [www.cites.org/eng/com/PC/18/E-PC18-14-04.pdf](http://www.cites.org/eng/com/PC/18/E-PC18-14-04.pdf), 23 April 2010.
- Cunningham, A.B. (2001). Applied Ethnobotany. People Wild Plant Use & Conservation. Earthscan, London, UK.
- FAO, GTZ and COMIFAC (2008). *Directives sous-régionales relatives à la gestion durable des produits forestiers non ligneux d'origine végétale en Afrique centrale*. GCP/RAF/398/GER Renforcement de la sécurité alimentaire en Afrique Centrale à travers la gestion et l'utilisation durable des Produits Forestiers Non Ligneux. Yaounde. 24 pp.
- Ghimire, S.K. and Nepal B.K. (2007). Developing a Community-Based Monitoring System and Sustainable Harvesting Guidelines for Non-Timber Forest Products (NTFP) in Kangchenjunga Conservation Area (KCA), East Nepal. Final Report submitted to WWF Nepal Program, Baluwatar, Kathmandu, Nepal.
- Ingram V., Awono A., Schure J. and Ndam N. (2009). National *Prunus africana* management plan for Cameroon. CIFOR, Yaoundé, Cameroon. 156 pp.
- Kathe, W., Honnef, S. and Heym, A (Eds) (2003). *Medicinal Plants in Albania, Bosnia-Herzegovina, Bulgaria, Croatia and Romania*. BfN Skripten 91; Federal Agency for Nature Conservation, Bonn.
- Lange, D. (1998). *Europe's Medicinal and Aromatic Plants: their Use, Trade and Conservation*. TRAFFIC International, Cambridge, UK. 77 pp.
- Lange, D. (2006). International trade in medicinal and aromatic plants. Actors, volumes and commodities. In: Bogers, R.J., Craker, L.E. and Lange, D. *Medicinal and Aromatic Plants*. Wageningen UR Frontis Book Series, 17: 155–170. Springer, Dordrecht.
- Marshall, N. (1998). *Searching for a Cure: Conservation of Medicinal Wildlife Resources in East and Southern Africa*. TRAFFIC International, Cambridge, UK. 112 pp.
- Machado, F.S. (2008). *Produtos Florestais Não Madeireiros: um manual com sugestões para o manejo participativo em comunidades da Amazônia*. Rio Branco, Acre: PESACRE and CIFOR. 105 p. Viewed at [www.pesacre.org.br](http://www.pesacre.org.br), 23 April 2010.

- Medicinal Plant Specialist Group (2007). *International Standard for Sustainable Wild Collection of Medicinal and Aromatic Plants (ISSC-MAP)*. Version 1.0. BfN-Skripten **195**, Bundesamt für Naturschutz, Bonn.
- Nguyen Dao Ngoc Van and Nguyen Tap (2008). *An Overview of the Use and Trade of Plants and Animals in Traditional Medicine Systems in Viet Nam*. TRAFFIC Southeast Asia (Greater Mekong Programme), Ha Noi, Viet Nam.
- NMPB (National Medicinal Plant Board of India) (in prep.). Guidelines for Good Field Collection Practices of Medicinal Plants.
- Oli B.R. and Nepal B.K. (2003). Non-timber Forest Products from the Kangchenjunga Conservation Area: Aspects of Trade and Market Opportunities. WWF Nepal Program, Kathmandu, Nepal.
- Rosser, A.M. and Haywood, A.J. (Comps) (2002). *A checklist for making Non-detriment Findings—Guidance for CITES Scientific Authorities*. SSC Occasional paper No. 27. IUCN, Gland, Switzerland and Cambridge, UK.
- Schippmann, U., Leaman, D. and Cunningham, A.B. (2006). A comparison of cultivation and wild collection of medicinal and aromatic plants under sustainability aspects. In: Bogers, R.J., Craker, L.E. and Lange, D., *Medicinal and Aromatic Plants*. Wageningen UR Frontis Book Series, **17**: 75–95. Springer, Dordrecht.
- Silva, S.R., Buitrón, X., de Oliveira, L.H. and Martins, M.V.M. (2001). *Plantas Medicinales de Brasil: Aspectos Generales Sobre Legislación y Comercio*. TRAFFIC South America. 44 pp., plus annexes.
- United Nations (2002). *Report of the World Summit on Sustainable Development, Johannesburg, South Africa*. United Nations, New York, USA.
- United Nations (2005). *The Millennium Development Goals Report*. United Nations, New York, USA.
- Walston and Ashwell (2008). *An Overview of the Use and Trade of Plants and Animals in Traditional Medicine Systems in Cambodia*. TRAFFIC Southeast Asia (Greater Mekong Programme), Ha Noi, Viet Nam.
- World Health Organization (2003). *Guidelines on Good Agricultural and Collection Practices (GACP) for Medicinal Plants*. The World Health Organization, Geneva, Switzerland. 72 pp.
- WWF (2006). *Species and People: Linked Futures*. WWF International, Gland, Switzerland.

# ANNEX

## PROJECT DOCUMENTS OBTAINABLE FROM TRAFFIC

### General

ISSC-MAP in English; Portuguese; Kannada; Hindi; Khmer; Nepali; Serbo-Croat and German  
ISSC-MAP project flyer in: English; Portuguese; Spanish; Khmer; Nepali and Serbo-Croat  
Analysis of ABS issues in the context of the “Saving Plants that Save Lives and Livelihoods” project (English)  
ISSC-MAP guidance documents on resource assessment and management planning (drafts, English)

### Bosnia–Herzegovina

Situation analysis (English; Serbo-Croat)  
*Allium ursinum* plant monograph and buyer specifications (English)  
Resource assessment (English, Serbo-Croatian)  
Internal collection rules (Serbo-Croatian)

### Brazil

Situation analysis (Portuguese)  
Red List assessments and species sheets for target species (Portuguese)  
Market analysis (Portuguese)  
Report on legislation and export analysis (Portuguese)  
Lessons learnt on ABS and protection of TK: the case of AVIVE (English and Spanish)

### Cambodia

Situation analysis (English)  
Species sheet for *A. ovoideum* (English; Khmer)  
Resource assessment of target species (English)  
Training material on resource assessment (Khmer)

### India

Risk assessment for project sites in Karnataka (English)  
Species selection reports (Karnataka) (English)  
Resource assessment (English)  
Market chain analysis, use and market links for *Parmelia* and *Coleus* harvested from the wild in Uttarakhand (English)

### Lesotho

CITES Non-detriment Finding report, *Pelargonium sidoides* (English)  
Draft Biodiversity Management Plan for *Pelargonium sidoides* (English)

### Nepal

Situation analysis, Kangchenjunga Conservation Area and Langtang National Park (English)  
MAP value chain study (English)  
Species selection reports, Kangchenjunga Conservation Area and Langtang National Park (English)  
Resource assessments, Kangchenjunga Conservation Area and Langtang National Park (English)  
Management plans for *Neopicrorhiza* and *Swertia* (English; Nepali)



TRAFFIC, the wildlife trade monitoring network, works to ensure that trade in wild plants and animals is not a threat to the conservation of nature. It has offices covering most parts of the world and works in close co-operation with the Secretariat of the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES).

For further information contact:

The Executive Director  
TRAFFIC International  
219a Huntingdon Road  
Cambridge CB3 0DL  
UK

Telephone: (44) 1223 277427

Fax: (44) 1223 277237

Email: [traffic@traffic.org](mailto:traffic@traffic.org)

Website: [www.traffic.org](http://www.traffic.org)

