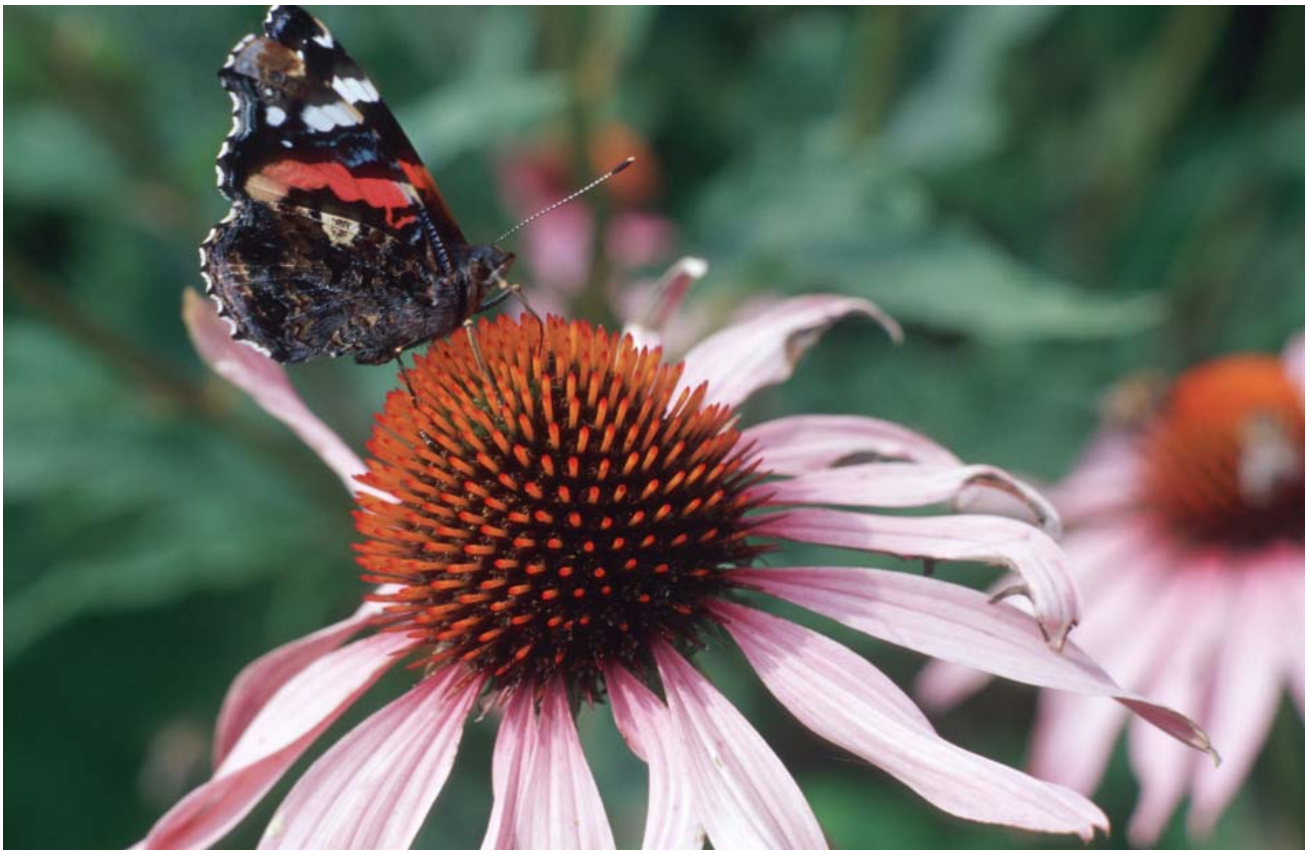
TECHNICAL PAPER

OVERVIEW OF WORLD PRODUCTION AND MARKETING OF ORGANIC WILD COLLECTED PRODUCTS



IFOAM
International Federation of Organic Agriculture Movements

International Trade Centre

Monograph

ABSTRACT FOR TRADE INFORMATION SERVICES

ID=38911 2007 SITC OVE
International Trade Centre UNCTAD/WTO
Overview of World Production and Marketing of Organic Wild Collected Products.
Geneva: ITC, 2007. vi, 91 p.
Doc. No. MDS-07-139.E

Study aiming to provide information on the worldwide production of and markets for organic wild collected products - discusses terminology used in wild collection; presents an overview of organic and other standards that relate to wild collection; provides data and background information about collection and marketing of certified organic wild collected products; includes selected case studies: Devil's claw from Southern Africa, Argan oil from Morocco, wild grown medicinal and aromatic plants from Bosnia and Herzegovina, and seaweed from North-America.

Descriptors: **Organic Products, Plant products, Medicinal plants, Aquatic plants, Standards, Market Surveys**.
EN
International Trade Centre UNCTAD/WTO, Palais des Nations, 1211 Geneva 10, Switzerland (http://www.intracen.org)

Doc. No. MDS-07-139.E

International Trade Centre (ITC)

The International Trade Centre (ITC) is the technical cooperation agency of the United Nations Conference on Trade and Development (UNCTAD) and the World Trade Organization (WTO) for operational, enterprise-oriented aspects of trade development.

ITC supports developing and transition economies, and particularly their business sector, in their efforts to realize their full potential for developing exports and improving import operations.

ITC works in six areas:

- Product and market development
- Development of trade support services
- Trade information
- Human resource development
- International purchasing and supply management
- Needs assessment, programme design for trade promotion

ITC's technical assistance concentrates on the three issues for which it believes the need for national capacity-building is most critical: helping businesses understand WTO rules; strengthening enterprise competitiveness; and developing new trade promotion strategies.

ITC supports the development of exports in organic and natural products from developing countries through technical assistance to trade support institutions, government bodies, the private sector and producer organizations.

www.intracen.org/organics

For further information about this study, please contact
Alexander Kasterine
Senior Market Development Adviser, ITC
kasterine@intracen.org

International Federation of Organic Agriculture Movements (IFOAM)

The International Federation of Organic Agriculture Movements (IFOAM) was established in 1972 as an umbrella organization for national organic agriculture associations. Members also include certification bodies, traders and processors, research and training institutions, consultancy agencies and others working in the organic sector.

IFOAM's work is based on its four principles of organic agriculture, *i.e.*

- the principle of health
- the principle of ecology
- the principle of fairness
- the principle of care

IFOAM works towards the worldwide adoption of ecologically, socially and economically sound systems that are based on these principles and represents the organic agriculture movement at the United Nations and other inter-governmental agencies.

IFOAM is a grassroots and member-driven organization, which has the **F**OAM General Assembly as its base. An important part of IFOAM is its Organic Guarantee System (OGS), which is designed to facilitate the development of organic standards and third-party certification worldwide, and to provide an international guarantee of these standards and organic certification. The IFOAM Basic Standards and the Accreditation Criteria are two of the main components of the OGS.

www.ifoam.org

Authors
Udo Censkowsky
Ulrich Helberg
Anja Nowack
Mildred Steidle

Organic Services GmbH
www.organic-services.com

Helberg Consult
www.helberg-consult.com

Reviewers
Birthe Thode Jacobsen, BIOService, www.BIOService.dk
Alexander Kasterine (ITC)

Acknowledgements

This report was initially prepared for the 1st IFOAM Conference on Organic Wild Production held in Bosnia-Herzegovina in May 2006. It is freely available from the ITC website www.intracen.org/organics.

ITC and the authors would like to thank the organisers of the IFOAM conference, the Agricultural Institute of the Republic of Srpska (AIRS) and Gunnar Rundgren of Grolink, for having initiated and supported the work. Special thanks also go to the many certification bodies and trading companies that have been interviewed during the course of this study, either by email, phone or during personal visits.

The cover photo is by Thomas Stephan: © BLE, Bonn/Foto.

This report was formatted by Emerentiana Kageuka and Anne Thobie (ITC).

Foreword

The collection of plant products from the wild is an important economic activity for millions of people. Collection of roots, leaves, nuts and fruits takes place in forests and marginal lands outside areas of agricultural cultivation. The areas are often important wildlife habitats and reservoirs of biodiversity. The people involved in collection are usually landless and poor and so rely heavily on the cash income that this seasonal work brings.

The market for "natural" products is growing as consumers demand ever greater quantities of foods, cosmetics and medicines that contain natural ingredients. This increased demand is raising prices. When transmitted through the value chain, these higher prices will reduce poverty levels of collectors but can also lead to overexploitation and in worst cases species extinction. Higher demand pushes people to harvest plants beyond their capacity to regenerate. This is particularly the case in open access lands or lands with weak communal management.

Without strong local organizations (e.g. community groups managing natural resources) there are few ways to regulate the harvest levels. In view of the weakness of environmental regulation enforcement agencies, it is therefore pertinent to consider how policy makers can utilize market-based mechanisms to manage natural resources.

Organic certification offers a market-based mechanism for policy makers and local organizations to consider. It is a potential "win-win" for environmental management and poverty reduction. Organic management systems are strongly linked to environmental benefits including safeguarding biodiversity and preventing soil erosion and water contamination. Higher prices generate higher incomes for collectors.

However, *no standard alone can guarantee sustainable management of natural resources* particularly of open access resources. Standards provide a tool for collectors and local organizations working together with a common objective. Technical assistance agencies build social capital through carrying out resource assessments and training programmes. Certification companies are also dynamic agents in this process through demanding traceability and ensuring standards are complied with..

Organic certification is therefore under scrutiny as a means to improve natural resource management and generate higher incomes for communities. This paper is intended to brief policy makers and practitioners about the role and potential of organic management and certification.

This work reviews how organic and several other important standards address the issue of sustainable management of collection areas. It also provides an overview of market trends in terms of products certified, land areas, numbers of collectors and market values. The work reveals that there is a huge variety of natural products (over 400 species), totalling almost 250,000 tonnes and covering 62 million hectares of land. The global value of the market for

products collected in the wild is estimated at between 630 and 830 million EURO, approximately 5-10% of the global market.

Alexander Kasterine
Senior Market Development Adviser
International Trade Centre (UNCTAD/WTO)
Palais des Nations
Geneva, Switzerland

April 2008

TABLE OF CONTENTS

ANNEXES

Executive Summary

Aims of the study

The aims of this study are to discuss the terminology used in wild collection, to give an overview of organic and other standards that deal with wild collection and to supply data and background information on collection and marketing of certified organic wild collected products worldwide.

Besides providing basic data on global wild collection activities, the survey discusses the terminology used in wild production and compares different organic standards for wild collection (private and legal). A large number of wild collected products are characterised as borderline cases originating from very extensive agricultural systems, which cannot be certified according to crop production standards.

Methodology

Certification bodies (CBs) are the basic source of information for getting a global overview on organic wild collection. Through questionnaires and interviews, information was collected on collection areas, wild collected products, harvest quantities, processing, collector households and sustainability. Data is presented for 2005. Secondary data sources include online databases of certification bodies, company information and personal communication with companies and other relevant actors in the sector.

Findings

In total, registered areas of 62 million ha for organic wild collection and a total number of 979 organic wild collection projects have been identified.

Four hundred and forty different organic products from a total of 71 countries have been reported. The majority of countries (80%) are developing or emerging economies.

It is estimated that between 150,000 and 200,000 people (including collectors, local agents and processors) are involved in organic wild collection. A total of 223,754 tonnes (t) of organic wild collected products were reported collected in 2005.

The largest collection areas were reported to be in Africa (26.8 Mio ha) and Europe (26.7 Mio ha), while the highest quantity (138,426 t) was reported harvested in Asia, collected from a relatively small area (6.2 Mio ha). The total global collection area is estimated to be much larger than reported as not all existing organic wild collection projects were identified. The figure may be between 78 and 104 million ha.

The ten countries with largest registered areas are Romania, Kenya, Zambia, Finland, Azerbaijan, China, South Africa, Uganda, Namibia and Bolivia. These countries cover nearly 92% of the total reported registered wild collection area. However, a large collection area does not necessarily translate into large economic value as the value per ha varies considerably between products.

The ten products which are harvested in largest quantity are bamboo shoots, brazil nut, lingonberry, rosehip, tea seed for oil, blueberry, iron walnut, green laver, coconut and white

mushroom. These products make up 136,411 t of a total of 223,754 t reported harvest quantity.
In 65% of the reported projects the export company is one of the holders of the certificate followed by manufacturing company (24%), importing company (18%), collector group (17%) and wholesaler (8%).

In Europe, Finland and Romania were reported to have the largest collection areas followed by Bulgaria, Iceland and Albania. Regarding the quantity, wild berries and mushrooms were reported to be the dominant wild collected products. The highest amounts were collected in Romania, Russia and Bulgaria as well as Serbia and Montenegro, Bosnia and Herzegovina and Albania. In Europe nearly 200 different plant products were reported collected.

In Africa, the number of certified organic wild collected products is very low. The most important products in terms of quantity were reported to be sheabutter, rosehip, gum arabic, argan oil and honeybush. The two countries with the largest reported collection areas (Kenya and Zambia) have only few collection activities.

The most important wild collected products in North America are wild rice, maple syrup, wild blueberries and blue green algae. Unlike Canada, organic wild collection in the United States is of less significance.

Brazil nuts were reported to be the most important wild collected product in Latin America, collected mostly in Bolivia. Other important products are coconut, heart of palm and rosehip. In terms of collection area Bolivia was reported to be the leading country, followed by Brazil, Peru and Guatemala.

China is the leading country in Asia in terms of registered collection areas. An even larger area was reported in Azerbaijan, but the certification status was not clear. China is also the country with largest reported harvesting of organic wild collected products in terms of weight. Asia shows the widest variety of collected products (approximately 241). Products such as bamboo shoots, walnuts, tea seeds, seaweed, berries and mushrooms are collected in large quantities. These products make up more than 80% of the total harvest.

In Australia and Oceania, organic wild collection has little commercial importance. Products include game, noni, sandalwood, sea weed, kangoroo grass and honey. There was almost no data provided on registered areas or quantities.

The study estimates the global value of organic wild collected products to be between EUR 630 to 830 million in 2005.

Europe is identified by far the leading market region as most of the reported organic wild collected products are certified according to the EU Regulation for organic agriculture. However, as US certification bodies are not sufficiently represented in this survey it is estimated that the real difference between the US and the EU market is less than indicated.

Approximately, 43% of the respondents indicated Europe (or European countries) to be the target market. North America accounted for 31% and Asia for 26%. Single countries as target markets have been mentioned in 212 cases. Of these the United States (57), Japan (29) and Germany (27) were mentioned most frequently. However, European countries were

mentioned in 76 cases, which further supports the overall result that Europe is the market region with the strongest demand for organic wild collected products.

Asked about their preference of either wild collected or cultivated plants of given species, many companies indicated preference for wild products if available in sufficient quantities, because of the lower prices compared to cultivated plants.

There are barely any products labelled as “wild” in the organic food retail markets. The only exception are some single-ingredient products, such as brazil nuts, wild rice, wild fish or edible mushrooms. However, a lot of fresh and frozen berries used in foodstuffs originate from wild collection. In other market segments, such as remedies and food supplements, the term “wild” is used more frequently.

Asked about the efficiency of their monitoring tool for the sustainability of wild collection, 60% of the CBs answered, that it is “sufficient” and 40% that it is “high ”. In order to provide better insight into the collection and marketing of organic wild collected products, some case studies have been presented, such as argan oil from Morocco, Devil´s Claw from Namibia, sage and juniper from Bosnia and Herzegovina and, finally, seaweed from North America.

1. Introduction

Wild collected products are mainly products with a food, cosmetic or medicinal use that are collected in the wild. There is no final and appropriate definition of the term, and many other terms are used for similar kind of products, like for instance "biodiversity products", "natural products" or "non-wood forest products". Such products may be used as, for example ;

- Ingredients for cosmetics and pharmaceuticals.
- Food and food additives (e.g. edible nuts, mushrooms, fruits, game, herbs, spices, fish, sweeteners).
- Fibres (alternative wood sources like rattan and bamboo, e.g. used in furniture, clothing, construction or utensils), detergents and other industry product ingredients.

A wide diversity of wild plant species are used and traded for medicinal purposes. About 440,000 t of medicinal and aromatic plants were traded internationally in 1996, with a reported value of USD 1.3 billion. More than 2,000 medicinal and aromatic plant species are used commercially in Europe. Approximately 90% of all medicinal and aromatic plants harvested in Europe are collected from the wild, with Eastern Europe and the Mediterranean region being the main suppliers[1].

Concern about sustainability of collection has arisen with increased trade in wild collected products. As demand for wild collected products increase, harvesting may increasingly become unsustainable.

Organic certification has the potential to contribute to increased sustainability of collection as well as offering many producers new marketing opportunities and higher prices.

The demand for organic wild collected products is significant. Products for direct food consumption, such as berries, nuts, mushrooms and a large number of herbs are the main items. There is also a growing interest for organic products in the body care and medicinal herb sectors. However, statistics on the production and marketing of organic wild collected products are very scarce.

This study aims to provide information on the worldwide production of and markets for organic wild collected products. It:

- Discusses terminology used in wild collection.
- Gives an overview of organic and other standards that relate to wild collection.
- Provides data and background information about collection and marketing of certified organic wild collected products.

The industry for wild harvested products, such as medicinal and aromatic plants and non-timber forest products, has little vertical integration, making it difficult to analyse data relating to international trade. Companies are often hesitant to share trade information and because of the high degree of cross-trading between companies it is difficult to fully understand the market. This applies to markets for both conventional and organic wild collected products.

[1] Lange (1998).

2. Definitions and Terms

There is no commonly agreed upon term for products collected in the wild. The term "wild collected products" is used interchangeably with similar terms, such as "wild crafted products", "wild harvested products", "wild grown products" etc[2]. Additional terms include "natural products" and "biodiversity products". Such terms cover not only plants or parts of plants but also land animals (insects, amphibians, game, etc.) and aquatic organisms (algae, fish, shellfish, etc). For products collected in the forests, terms like "non-timber forest products" (NTFPs), "non-wood forest products" (NWFPs), "minor forest products", "secondary forest products", etc. are used.

This lack of clear terminology and definitions causes problems in communicating and reporting between countries and languages. People may use the same terms but with different definitions, often changing the underlying concept. Another problem is that studies, standards and statistics may not be comparable from one country (or author) to another. Therefore, a mutually recognised terminology, including clear definitions, is needed for compiling statistics or improving legislation on wild collected products in a country[3].

With respect to the certification of wild collected products it is necessary to have a common understanding and a clear definition of wild collected products in general and organic wild collected products in particular. These clear definitions do not yet exist.

Organisations working with organic agriculture generally do not have definitions of what wild collected products are but tend to define wild collected products by the certification requirements.

IFOAM, in its current version of the IBS (IFOAM Basic Standards, 2005), does not provide any definitions of wild collected products, but does provide basic requirements for the organic management of wild harvesting. In section 2.4.1 it is mentioned that "Wild harvested products shall only be certified organic if they are derived from a stable and sustainable growing environment", and in section 2.4.2. it is mentioned that "Operators shall harvest products only from a clearly defined area …".

Similarly, in the EU Regulation 2092/91 on organic production and labelling wild collected products are not specifically defined. Wild collected products are referred to in Annex I, A, 4, where it is mentioned that "The collection of edible plants or parts thereof, growing naturally in natural areas, forests and agricultural areas …." for which provisions for certification are made.

One common and generally accepted definition of wild collection is that only the products can be certified but not, as in organic agriculture, the land and/or collection area. However, the collection area needs to be registered by the certification body.

Table 1 shows a selection of terms, definitions and descriptions relating to products collected from the wild.

2 In this study the terms mainly used are "wild collected products", "wild collection" and "wild harvested production", the latter being the term used in the IFOAM Basic Standards.
3 Vantomme (2002).

Term	Source	Definition / description
Wild collection	International standard for sustainable wild collection of medicinal and aromatic plants (ISSC-MAP), working draft, June 2006 WHO, IUCN & WWF (2006). Available at http://www.floraweb.de/map-pro/	Appropriate definition needed. Practice of gathering a non-cultivated native or naturalized resource from its natural habitat (which may be forest, meadow, pasture, agricultural field, desert, or any other environment in which non-cultivated species are present).
Non-wood forest products	FAO homepage. Available at http://www.fao.org/forestry/foris/webview/forestry2/index.jsp?siteId=2301&sitetreeId=6367&langId=1&geoId=0	NWFP are products of biological origin other than wood derived from forests, other wooded land and trees outside forests. NWFP may be gathered from the wild, or produced in forest plantations, agroforestry schemes and fromtrees outside forests.
Wild harvested products	IFOAM Basic Standards. Term used in section 2.4.1.	(Not defined)
(None)	EU Regulation 2092/91 of 24 June 1991 on organic production of agricultural products and indications referring thereto on agricultural products and foodstuffs. Description in Annex I, A, 4.	The collection of edible plants or parts thereof, growing naturally in natural areas, forests and agricultural areas.
Wild collection	Guidance Manual for Organic Collection of Wild Plants. SIPPO	1. The collected plants grow naturally in an area, which has not been treated with prohibited inputs (according to the respective organic regulation) for at least 3 years. 2. The collection areas are not owned by the company itself (public land) and/or are of vast size. 3. The collected plants must grow and regenerate naturally without any agricultural measures. 4. Certified are plants grown in an approved (by an accredited certifier) area. The area (land) itself is not certified.
Wild crop	The National Organic Program. USDA	Any plant or portion of a plant that is collected or harvested from a site that is not maintained under cultivation or other agricultural management.
Wild-crop harvesting	The National Organic Program. USDA. Mentioned in §205.2	(None)

Table 1: Selection of terms, definitions and descriptions relating to products collected from the wild.

Organic wild collected products may be divided into three major groups:

1) Medicinal and aromatic plants (MAPs)

Medicinal plants are used in conventional and traditional medicine, while aromatic plants are used for their aroma and flavour. MAPs are an essential part of many traditional health care systems all over the world.

2) Non-timber forest products (NTFPs)

NTFPs may be regarded as biological products (other than timber) that are extracted from natural forest ecosystems, managed plantations and semi-wild trees growing on farmlands. They include both plant and animal products. Examples of NTFPs are edible nuts, mushrooms, fruits and berries, herbs, spices, gums, aromatic plants, game, wood bark, animal fodder, ornamental plants and plant or animal products for medicinal, cosmetic or cultural uses.

MAPs and NTFPs are not strictly separated product groups. Some Non-Timber Forest Products may be Medicinal and Aromatic Plants and vice versa, and some products do not fit in either group.

3) Wild capture products

Wild aquatic products are biological species harvested in aquatic ecosystems provided that man-made contamination can be excluded. Wild aquatic products are not managed by humans and according to the ICS/FVO sustainable wild aquatic harvest requirements the harvesting or collection methods must maintain the target species' capacity for self-renewal, the populations of non-target species, and the ecosystem as a whole.[4]

The terminology as to when a product may be regarded as harvested from the wild, as opposed to cultivated or harvested from managed areas, is not clear. Some border line cases include the following:

- Products growing wild on plantations, farm- or pasture land. Examples include sheabutter trees and gum arabic in West Africa, argan nuts in Morocco, MAPs in Europe and pimento trees in Jamaica.
- Products collected in the wild and cultivated (e.g. cashew nuts in India and Africa, coffee trees in Ethiopia, coconuts in Dominican Republic, Acai palms in Amazon regions, rosehips in Argentina or Chile, walnuts in China).
- Products growing wild in their natural environment, which to some extent are manipulated by collectors (e.g. wild rice, maple forest, bamboo forests, wild bees).

In general, it is up to the respective certification body to define the nature of the production system. As crop production standards often do not have sufficient or adequate provisions for very extensive production systems ("almost wild"), certification bodies may well certify such extensive production systems against wild collection standards. For instance, often the land used for extensive production systems is used collectively, and collectors may include small-scale farmers in other areas. Many requirements included in organic crop production standards, like for instance requirements of documentation of farm area and activities, would be difficult to comply with. Applying requirements of organic production standards in such cases would entail that a good number of wild collection projects would be excluded from organic certification as an organic certification against crop production standards is not a realistic option. Organic certification against wild collection standards also has the advantage that project operators do not have to go through a conversion period, which allows for a quicker market access.

[4] ICS/FVO (2003).

While certification bodies take the final decision as to which standard applies, a code of good practice for these “borderline cases” should include social criteria in order to avoid marginalized communities, for which collection plays an important role for their livelihood, are excluded from organic certification for technical reasons.

3. Standards Used for Collection from the Wild

3.1 Standards for organic wild collection

Standards for certification of wild collected products are included in most organic standards, private as well as regulatory. The IFOAM Basic Standards dealt with wild collection for the first time in the 1992 version.

The early focus of organic standards was restricted to farming systems and definition of the entire production process from sowing to the final product. This is different for wild collected products standards. These standards focus on collection activities and the way they are carried out. The aim is to ensure that the collection methods are sustainable and do not damage the ecosystem and natural yield of the collected products.

In this section, similarities and differences between different standards are identified. The standards are categorized as follows:

a) Inter-governmental and governmental standards

- FAO/WHO Codex Alimentarius Commission Guidelines for the production, processing, labelling and marketing of organically produced foods.
- EU regulation (EEC) on organic production of agricultural products and indications referring thereto on agricultural products and foodstuffs.
- U.S. Department of Agriculture´s National Organic Programme (NOP).
- Japanese Agricultural Standard of Organic Agricultural Products (JAS).
- National Standard of People's Republic of China, Organic Products.
- National Standard of Canada for Organic Agriculture[5].

The draft revision of the EU regulation published December 2005 has been considered as well.

b) Private standards

- IFOAM Basic Standards (IBS).
- A selection of private standards belonging to IFOAM accredited certification bodies (ACB).

The comparison of the governmental and inter-governmental standards are summarized in a table presented in Annex 1.

The comparison of the private standards are summarised in a table presented in Annex 2. As the organic standards of ACBs all comply with the IBS, the comparison is restricted to requirements not included in the IBS.

Based on the review of the existing standards the tables presented in Annexes 1 and 2 have been divided into columns each containing excerpts from the standards on specific requirements on wild collection, as well as definitions, if any, and the section of the standards

[5] Since the writing of this report, this standard has been superseded by a new standard "Organic Production Systems. General Principles and Management Standards", in which terms like "wild plant", "wild crop", "wild plant products" and "wild product" are used.

which deal with wild collection. Where relevant, comments have been made and included in the table as well. The heading of each column reflects the specific topic addressed in the standard (e.g. definition, collection area, etc.). In those cases where a standard does not contain requirements on the issues included in the table, no information is provided in the relevant cell.

3.2 Discussion of standards for organic wild collection

The collection of products from the wild may be covered by organic certification; however, there are different definitions, requirements and ways of distinguishing wild collection from organic production.

3.2.1 Terms and definitions

Only the NOP and Naturland standards provide a definition of the terms "wild crop" and "wild grown products". In other standards wild collected products are defined indirectly by the applicable requirements that come into effect when products are intended to be labelled within the scope of the organic standards.

The NOP defines "wild crop" in §205.2 as follows:

"Any plant or portion of a plant that is collected or harvested from a site that is not maintained under cultivation or other agricultural management".

The definition of "wild grown products" in the Naturland standard, Part B, IX, 1 is:

"Products that have grown without or with low influence of the operator gathering the products. The harvest has to be planned and carried out applying a sustainable system that is eco-friendly and socially acceptable."

At the time of writing, the other standards do not contain specific definitions, but include the following terms:

- "wild harvested products and common/public land management" (IBS).
- "collection of edible plants and parts thereof, growing naturally in natural areas" and "collection of wild plants" (The FAO/WHO Codex Alimentarius Commission guidelines).
- "collection of wild plants" (The EU regulation).
- "agricultural products growing naturally" (JAS).
- Wild plant collection (China).
- Wild and natural products (Canada).

The standards reviewed in this study include specific sections that address the issue of wild collection. These sections establish requirements applicable for the wild collection situation that are different from the requirements applicable for certification of organic production systems. However, all other requirements, *e.g.* those dealing with product flow, transport, processing etc., are common for both situations.

3.2.2 Scope

As most of the standards lack definitions of wild collected products or similar terms, it is difficult to identify clearly the scope of the respective wild collection standards.

The EU regulation and the FAO/WHO Codex Alimentarius Commission Guidelines refer to the collection of "edible plants and parts thereof", hereby excluding products of animal origin.
The proposed revision of the EU regulations, which was presented by the EU Commission in December 2005, provides in its Article 2 (c) the following relevant definition: "Plant production means production of agricultural crop products and harvesting of wild plant products for commercial purposes". Hence, wild plant products are also included in the scope of the proposal for a revised regulation, whereas aquatic species are not included in the scope of wild collection.

In the IFOAM Basic Standards, reference is made to the collection of "sedentary aquatic species", hereby clarifying that, for example, the collection of mussels or algae lies within the scope of the standards.

Some private certifiers, in addition to their general organic wild collection standard, have specific standards for different wild collection circumstances, *e.g.* wild fishery standards (KRAV), collection of maple syrup, wild rice and seaweed (OCIA) or aquatic organisms (ICS/FVO).

Wild collected products may also be used as or in agricultural inputs, such as seaweed as approved fertilizer or soil conditioner. Some certifiers approve or certify the respective input based on the listing in the applicable standards, while others also apply the wild collection standards in order to verify the collection practices.

3.2.3 Labelling

KRAV and Naturland require that wild collected products are distinguishable from products originating from organic agriculture. Other standards do not seem to distinguish between organically cultivated or collected products when it comes to labelling. KRAV has a special label for wild collected products. However, if a wild collected product is mixed with other items, *e.g.* wild berries and sugar in a jam, then the regular KRAV mark must be used.

3.2.4 Collection area

Standards commonly state that the area where gathering takes place has to be identifiable. Sustainability and/or stability are key words in all standards.

Some standards specifically require collection to take place only from a stable ecosystem. All standards require gathering to be carried out in a manner that does not exceed sustainable yields. Some standards also require the protection of plant species that are not collected, but which may be affected by collection methods.

Most standards deal with the collection activity and leave open whether or not the land used for collection of specific products is cultivated. The standards merely apply to the collected products and include some additional requirements to prevent contamination with prohibited substances.

3.2.5 Contamination

Being part of organic production standards, wild collection areas must not have been treated with non-allowed substances in recent history, usually for a period of at least three years. In addition, standards require appropriate distances, or even buffer zones, to conventional farmland.

3.2.6 Responsibility and knowledge

Although not specifically mentioned in most standards, the IBS and the FAO/WHO Codex Alimentarius Commission Guidelines require that there should be clear responsibilities for the collection area. An assigned person must be familiar with the collection area in order to be able to monitor the sustainability of the collection activity.

3.2.7 Other Activities not under control of the operator

Although there is a risk that non-registered harvesters, who are not under control of the certified operator, are also active in the collection area, organic standards normally do not specify how to ensure sustainable collection methods are used by all collectors active in the area. Although NASAA requires that all activities in the collection area "must not fail to meet the same requirements" and Naturland standards demand that the "maximum amount" that could be harvested is defined, it remains unclear how harvesting practices of non-registered collectors can be assessed or even controlled. The aspect of non-registered collectors operating in registered collection areas may be the weakest point in wild harvest certification.

3.2.8 Implementation of standards

The assessment of whether collection activities are sustainable is crucial for the development of organic wild collection projects. However, the potential to improve sustainability by amending standards is limited. Wild collection activities are carried out in various regions under very different circumstances, and therefore standards have to be flexible in order to ensure that they can be implemented under different circumstances and for various products.

Since wild collection standards may be very general, several CBs have developed detailed policies and guidelines on how to implement such standards as well as how to organise inspections. These policies and guidelines are based on practical experiences in different collection areas, and serve as valuable sources for developing further organic wild collection projects. Examples of such detailed polities and guidelines include the policies of the German certification body, BCS, the "Guidance Manual for Organic Collection of Wild Plants" published by SIPPO and the Swiss certification body, IMO, and the "Wild Plants Harvesting Certification Policy" and the "Wild Plants Harvesting Inspection Guidelines" of the US certification body, OCIA.

3.3 Non-organic standards for wild collection

The large majority of medicinal and aromatic plant species currently traded is collected from the wild. In addition to bodies active in the organic sector, there are several non-organic organizations and initiatives that also address wild collection practices. For organic standard setters these organizations and initiatives and their published documents or standards can be an important source of improvement of their wild collection standards.

Three non-organic standards dealing with wild collection are presented and compared below. These are:

- International Standard for Sustainable Wild Collection of MAPs.
- WHO Guidelines on Good Agricultural and Collection Practices (GACP) for Medicinal Plants.
- FSC Principles and Criteria for Forest Stewardship.

3.3.1 ISSC-MAP

The development of an International Standard for Sustainable Wild Collection of Medicinal and Aromatic Plants (ISSC-MAP) is a joint initiative of the German Federal Agency for Nature Conservation (BfN), World Wide Fund for Nature (WWF)/TRAFFIC[6], Germany, the World Conservation Union (IUCN), Canada, and the IUCN Medicinal Plant Specialist Group (MPSG) of the Species Survival Commission (SSC)[7].

Based on existing general conservation guidelines, the initiative and the final standard is intended to provide specific guidance and criteria for the sustainable wild collection of MAPs. The initiative builds on existing principles and guidelines, such as those of IFOAM, the Forest Stewardship Council (FSC), and the Fairtrade Labelling Organizations International (FLO). The objective of ISSC-MAP is "to provide a framework of principles and criteria that can be applied to the management of MAP species and their ecosystem; to provide guidance for management planning; to serve as a basis for monitoring and reporting; and to recommend requirements for certification of sustainable wild collection of MAP resources."[8]

The standard is divided into three sections covering responsible collection practices, legal and ethical requirements and responsible management and business practices. Each section contains principles and criteria, the latter indicating results of adherence to the principles.
The development of indicators and verifiers is announced in order to complement the document.

3.3.2 GACP for medicinal plants

The World Health Organization (WHO) guidelines on good agricultural and collection practices (GACP) for medicinal plants[9] were published in 2003. The main focus of this document is to improve the quality of herbal medicines, since poor quality may result in negative health consequences. Therefore the document predominately focuses on quality control and safety. A further objective is to encourage and support sustainable cultivation and collection.

The WHO GACP guidelines are divided into five sections. Section 1 provides an introduction, section 2 deals with good agricultural practices for medicinal plants and section 3 with good collection practices. In section 4 general technical aspects such as post harvest processing, packaging or labelling are covered and section 5 deals with other relevant issues, like ethical and legal considerations and research.

[6] TRAFFIC is a WWF/IUCN wildlife trade monitoring network.
[7] For further information, visit www.floraweb.de/map-pro (22/03/06).
[8] ISSC-MAP Working Draft 3. 1. February 2006.
[9] Available at http://whqlibdoc.who.int/publications/2003/9241546271.pdf (22/03/06).

3.3.3 FSC policy on NTFP certification

Forest Stewardship Council (FSC) accredited certification bodies certify forest operations according to the FSC Principles and Criteria for Forest Stewardship[10]. Although there are no specific NTFP standards, FSC allows certifiers to include certification of NTFPs in their scope of activity. NTFPs coming from certified forests may carry the FSC logo on product. Standards used must be prepared or adapted in the region for that particular NTFP. Certifiers may also develop their own NTFP standards. FSC does not require that such standards be formally approved by FSC[11].

There is also a draft guidance document for certification bodies for the assessment of NTFPs[12]. This document aims at applying FSC principles and criteria to the evaluation of harvesting methods of NTFP.

The FSC certification scheme of NTFPs is still under development. Whether or not FSC will amend the existing policies and finally adopt the guidance document mentioned above is still being discussed.

Other forest certifiers like Rainforest Alliance or Soil Association, both FSC accredited, have already developed their own NTFP standards.

Rainforest Alliance, operating the SmartWood programme for forest certification, published its own NTFP Certification Standards in November 2002.

A comparison has been done between the draft "Guidance for FSC accredited certification bodies in the assessment of non timber forest products (September 2000)", the WHO guidelines on good agricultural and collection practices (GACP) for medicinal plants, as well as the ISSC-MAP, and is presented in a table in Annex 3.

[10] For further information visit http://www.fsc.org.
[11] FSC Guidelines for Certification Bodies, FSC-GUI-20-200-EN, Part 2.8 Non-Timber Forest Products. March 2005.
[12] See The Forest Stewardship Council and Non-Timber Forest Product Certification: A discussion paper; 10 October 2002, appendix D.

4. Organic Wild Collection Worldwide

4.1 Methodology

Data from 71 countries have been collected and used for the study. Data was collected from certification bodies and other operators in the organic wild collection sector during the period December 2005 to April 2006. Certification bodies were identified using the database of The Organic Standard, in which information on certification bodies worldwide is collected annually by Grolink. It is estimated that around 95% of all certification bodies world-wide carrying out certification according to organic standards were contacted.

Organic certification bodies are the primary source of information in order to establish a global overview of organic wild collection. Certification bodies were interviewed by email and telephone and through personal interviews at BioFach 2006 in Germany. In addition some certification bodies were visited. Data was collected via a questionnaire covering project country, registered collection area, products collected as well as certified quantity and harvest area in 2005 and number of registered collectors. Furthermore, the questionnaire included questions regarding the sustainability of wild collection and processing steps carried out by collectors. For each product certification bodies were asked for information on collection areas and quantities for 2003, 2004 and 2005. The questionnaire used for obtaining information from certification bodies are presented in Annex 4.

Four hundred and one organic certification bodies were contacted and asked for data on their certification of organic wild collected products. As shown in Table 2, 45% of the contacted CBs responded, of which 23% carried out certification of wild collected products. It is believed that the large majority of those certification bodies most active in the organic wild collection business were among those responding to the questionnaire.

	Number of CBs	**% of total number of CBs**
Total contacted	401	100
Responding	182	45
Not responding	219	55
Certifying organic wild collection	42	10
Not certifying organic wild collection	140	35

Table 2: Result of survey of organic certification bodies.

The 182 certification bodies, who responded to the questionnaire, gave details on 311 certified organic wild collection projects[13].

However, the questionnaires were not always satisfactorily completed, and often questions concerning certified quantities or registered land area were left unanswered. In order to complement the data collected from certification bodies, data was also collected from secondary sources, including:

- Online data bases of certification bodies containing information on wild collection operators.

[13] The term "project" means the preparation, implementation and control of wild collection activities by the respective certification body.

- Companies and other operators dealing with organic wild collected products (using different methods, including personal interviews).

Questionnaires used for collection of information from companies in the sector are presented in Annex 5.

As a result of collecting information from secondary sources, 717 additional certified organic wild collection projects were identified, accounting for 30% of the identified total organic wild collection area. Hence, a total of 1,028 organic wild collection projects were identified. However, data from 979 projects only are included in this study because of the fact that either detailed project data was not obtained, or project data was believed to be either unreliable or presented in a form not compatible with statistics presented in this study.

The majority of the projects identified via other sources than certification bodies was certified by those certification bodies having responded to the questionnaire, but which had not provided complete information on wild collection projects. Only a minor part of the additional projects identified were certified by certification bodies, who did not respond to the questionnaire. Consequently it is believed that most wild collection projects implemented during 2005 have been identified and included in the present study, at global as well as country levels. However, there are some exceptions, *e.g.* the United States of America and Italy, were the response rate from certification bodies was low. It is estimated that the reported registered wild collection area represents between 60 and 80% of the total registered organic wild collection area world-wide.

It should also be mentioned that in some cases wild collection may have been certified by several certification bodies. As data was submitted anonymously, correction for double or triple certification of same areas was not possible. Consequently, adding up reported registered wild collection areas at country, regional and global levels, might result in totals above the true level of reported registered areas. For example, this might be the case for Romania, where the large total reported area of organic wild collection is 15,927,862 ha, (Table 5) corresponding to 67% of the total country area. The extent to which data is biased because of multiple certifications is not known.

In total, certifiers reported 1,002 certified organic wild collected products. Among these, many identical products were reported from two or three different projects. Furthermore, several species were reported in groups of *genus*, for example different pine nut kernels were put into the group "*Pinus spp., semen*". 319 organic wild collected products were reported without any data on harvested quantities. In conclusion, 441 different wild collected products were identified as certified organic. It is estimated that the reported data on harvested quantities of certified organic wild collected products represent approximately 40 to 60% of the total world wide harvested quantities of certified organic wild collected products in 2005.

While data on harvested quantities of certified organic wild collected products was collected for the period 2003 to 2005[14], the responses from CBs were sufficient for statistical processing for year 2005 only. The certification bodies do not always have much data on organic products marketed. This applies particularly to non-food products that are not covered by the EU regulation on organic labelling and for which no transaction certificates

[14] The volumes indicated in the following chapters are certified quantities which have been harvested and offered to the market. Some certifiers differentiate between a maximum harvest quantity per wild product (estimation done by the inspector) and the quantity of the finally certified wild product.

need to be issued. Therefore, harvested and marketed quantities of the reported products may well be higher than the reported quantities.

It should also be mentioned that in some questionnaires it was not clear whether the information provided on harvested quantities was fresh or dry weight, *e.g.* for mushrooms harvested in China. This should be borne in mind when figures on quantities harvested and marketed are presented.

While data on specific products or countries may not be complete, it is believed that based on the high response rate from the organic certification bodies most active in the wild collection business, as well as the additional information collected from various sources in the sector, the overall picture of certified organic wild collection worldwide is valid.

4.2 Global overview of organic wild collection areas

In total, CBs and other operators in the sector have reported areas of almost 62 million ha registered for organic wild collection, and provided information on 979 organic wild collection projects (Table 3). The total global organic wild collection area is estimated to be between 77 and 103 million ha under the assumption that the reported area represents 60% or 80% of the registered wild collection area world-wide. The latter figure would be equivalent to the land surfaces of France and Spain together.

Continent	Certified organic wild collection projects	Registered area (ha)	Harvested quantity (t)
Africa	25	27,439,963	4,785
Asia[15]	145	6,261,176	138,426
Europe	127	26,715,956	33,365
Latin America	25	1,346,420	26,876
North America[16]	648	180,000	102
Oceania	9	16,090	20,200
Total	**979**	**61,959,605**	**223,754**

Table 3: Reported certified organic wild collection projects world-wide per region, registered areas (ha) and quantities harvested (t), 2005.

The largest registered total area of collection is reported in Africa and Europe. Largest collected quantities in terms of weight are reported in Asia. However, due to different weights of the harvested products, the quantities differ tremendously (*e.g.* brazil nut vs. lime tree flowers). Therefore, areas of wild collection are not necessarily correlated to weight of collected material. Table 4 illustrates that small quantities of material can be collected from large collection areas. Conversely, large quantities of material can sometimes be collected from relatively small collection areas.

[15] The statistics on Asia comprise a large collection area of 3.2 million ha in Azerbaijan, where certification status was not clear.
[16] The high number of North American organic wild collection projects comprises several Canadian wild rice and wild maple projects.

	Registered area (ha)	Harvested quantity (t)
Country		
Finland	7,500,000	312
China	1,200,000	71
Uzbekistan	500,000	70
Romania	500	57
Germany	3	2

Table 4: Selected large and small wild collection projects, sorted by reported registered collection area and harvested quantities, 2005.

In several cases single projects have very large and well above average size collection areas. An example is one of two reported projects in Kenya with a registered collection area of 15 million ha alone (table 4). Wild collection activities are more common in regions, where there is a scarcity of other income generation opportunities. This situation is reflected in Table 5 that shows the 10 countries were the largest registered organic wild collection areas were reported. Apart from Finland, all are developing or emerging countries.

	Number of projects	Registered area (ha)	Quantity (t)
Country			
Romania	17	15,927,862	10,320
Kenya*	2	15,080,028	- -
Zambia	2	9,067,500	322
Finland	1	7,507,614	312
Azerbaijan*	1	3,200,000	-
China	103	2,252,900	135,885
South Africa	3	1,904,600	316
Namibia	1	728,493	2
Bolivia	4	722,387	12,572
Uganda	2	635,000	30
Total	**136**	**57,026,384**	**159,759**
Total remaining countries	**843**	**4,933,221**	**63,995**
Total all countries	**979**	**61,959,605**	**223,754**

Table 5: The 10 countries with largest registered organic wild collection area reported, number of projects, registered area (ha) and quantities harvested (t) for these countries, sorted by registered reported area, 2005. *No data obtained on harvested quantities.

Romania was reported to have the largest registered wild collection area, followed by Kenya and Zambia. The ten countries, for which the largest areas were reported, comprise more than 90% of the total reported registered wild collection area.

Annex 7 contains a list of registered areas, as well as harvested quantities, for each country, which was reported in the survey for 2005.

4.3 Global overview of organic wild collected products

A wide variety of different wild collected products are certified organic and marketed. Approximately 440 different organic wild collected products have been identified. Nearly all of them are plant products, including seaweed (*e.g. Ulva lactuca, Ascophyllum nodosum, Laminaria digitata*), and mushrooms. The only animal products identified were certified organic game in Australia, wild fish in Sweden, the United States and Uganda, and honey in Zambia, Kenya, Indonesia and China. Some CBs mentioned the existence of organic wild

collection projects in Central Africa, Italy and Madagascar, but without providing information on the type of collected products.

A simple grouping of the different organic wild collected products is presented below[17].

- Medicinal and aromatic plants (253 products).
- Nuts (20 products).
- Fruits (37 products).
- Edible mushrooms (29 products).
- Others (26 products).
- Bamboo shoots (fresh weight).

Figure 1 indicates the relative share of various product groups according to harvested weight.

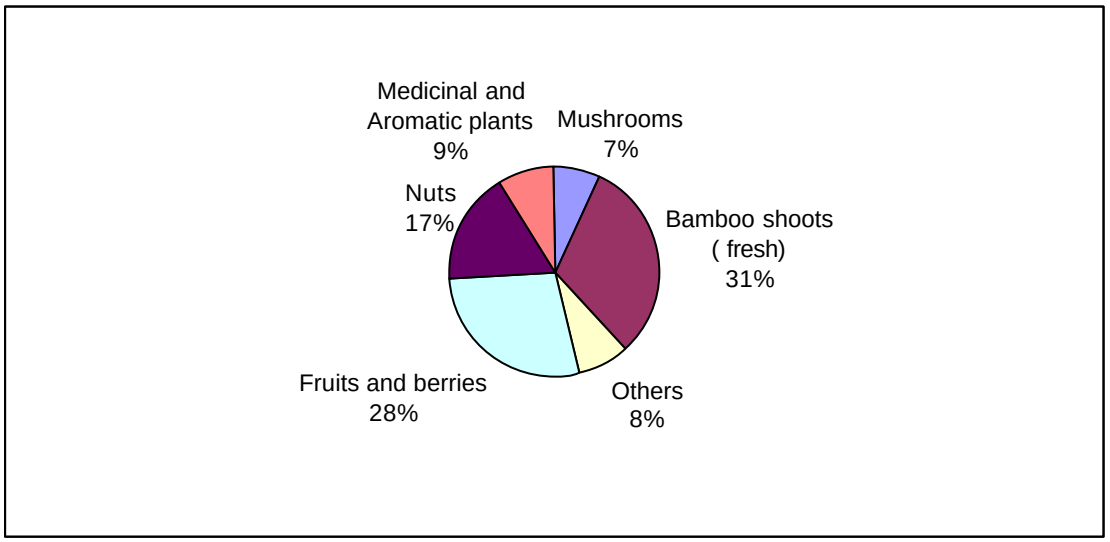


Figure 1: Relative share of organic wild collected product groups, based on reported quantities in 2005.

As shown in Figure 1, the largest proportion of reported quantities is made up by the category bamboo shoots (*Bambusum vulgaris*). In principle bamboo shoots belong to the group "others", but it has been singled out because of its relative high volume. The group "others" also include hearts of palm (*Euterpe oleracea*) and different seaweed species. Most of these products are traded fresh or in tins, which results in relatively higher weights. The wild fruit category is dominated by various berries such as lingonberries (*Vaccinium vitis-idaea*), blueberries (*Vaccinium myrtillus*), small cranberry (*Vaccinium oxycoccus*) and raspberries (*Rubus idaeus*), etc. Much of these berries are traded in fresh or frozen form.
The wild nuts category is led by brazil nuts (*Bertholletia excelsa*), iron walnut (*Juglans sigillata*), coconut (*Cocos nucifera*) and different pine nut kernels (*Pinus spp.*).

As for edible mushrooms, white mushroom (*Agaricus hortensis*) and king bolete (*Boletus edulis*), are the species with the highest certified quantities reported.

Medicinal and aromatic plants (MAPs) is the most diverse group in terms of number of different species, comprising more than 253 different plant species. An exact figure can not

[17] It should be noted that some plants can be classified in more than one category.

be given as some questionnaires contained information on plant genus only (*e.g. Tilia spp.*) The leading species in terms of weight are rosehip, tea seeds, star anise and liquorice.

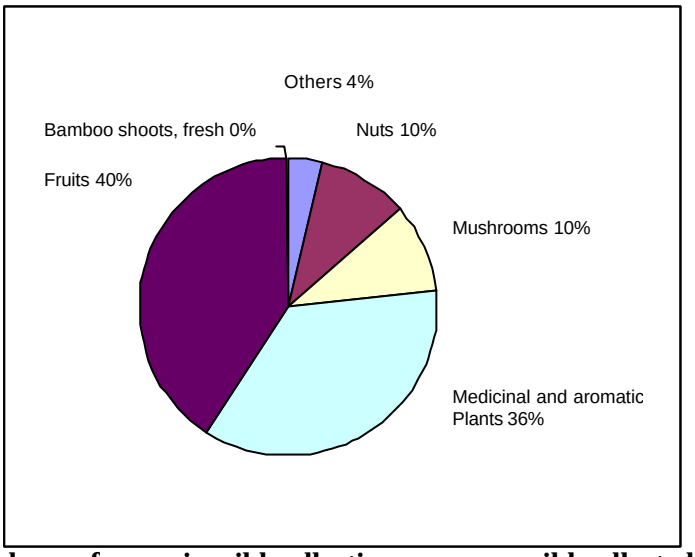


Figure 2: Relative share of organic wild collection area per wild collected product group (%), 2005.

Figure 2 shows the relative share of the total reported collection area of each product category. The comparison of the categories illustrates that in 2005 fruits and berries were collected on 40% of total reported harvest area, followed by MAPs with 36%.

Table 6 lists organic wild collected products by quantity. Bamboo shoots is the product represented in largest quantities in terms of weight[18], followed by brazil nuts and lingonberries. The very important product category of MAPs, such as mountain lavender, is included in Table 6 to a lesser degree because of its relatively small weight. A complete list of reported wild collected products, sorted by scientific name as well as by quantity, is presented in Annex 6.

[18] Fresh weight indication contributes to this result.

Product		Area (ha)	Quantity (t)
Scientific name	**Common name**		
Bambusum vulgaris	Bamboo shoots	507,076	70,873
Morinda citrifolia	Noni fruit	495	20,000
Bertholletia excelsa	Brazil nut	1,234,528	16,073
Vaccinium vitis-idaea, fructus	Lingonberry	1,548,755	8,050
Rosa canina, fructus	Rosehip	11,800,073	7,782
Camellia sinensis, semen	Tea seed for oil	16,755	6,162
Vaccinium myrtillus, fructus	Blueberry	13,212,757	6,045
Juglans sigillata	Iron walnut	667	6,000
Ulva lactuca	Green laver, sea lettuce	593	5,450
Cocos nucifera	Coco nut	1,937	5,175
Agaricus hortensis	White mushroom	-	4,800
Vaccinium uliginosum, fructus	Bog bilberry	226,755	3,704
Hippophae rhamnoides	Seabuckthorn	2,351,662	3,543
Pinus spp., semen	Pine nut kernels	2,199,384	3,108
Vaccinium oxycoccus	Small cranberry	200,000	3,000
Camellia cordifolia	Camellia cordifolia	10,495	2,758
Pinus nigra, semen	Austrian pine seeds	7,423	2,596
Butyrrospermum parkii, fructus	Shea butter	650,800	2,530
Boletus edulis	King bolete	1,160,456	1,998
Juglans regia, fructus	Walnut kernel	1,378,682	1,888
Porphyra tenera	Nori	100	1,800
Rubus idaeus, fructus	Raspberry	9,669,222	1,769
Total			**185,104**
Total remaining products			**38,650**
Total			**223,754**

Table 6: Wild collected products with largest reported harvest quantities, their reported collection area (ha) and harvested quantities (t), sorted by harvested quantity, 2005.

Figure 3: Women preparing wild collected mountain lavender for drying, France (Source: J.-C. Richard, Farfalla Essentials AG, Switzerland).

4.4 People involved in organic wild collection

Certification bodies require that in organic wild collection projects a register of collectors is maintained. The questionnaires include questions on number of collectors, gender and whether children are involved in collection.

A total of nearly 80,000 people are reported to be collectors of organic wild collected products. The real figure is likely to be much higher, as for each registered collector, family members often assist in collection as well.

The total number of people involved in organic wild collection and handling is estimated to be around 150,000 to 200,000 world-wide. This figure includes workers in processing facilities, regional agents and buyers transferring the wild collected product harvest to processing and export facilities.

	Number of collectors reported for n projects		**Gender and family aspects:** ***number of projects involving men, women and children***		
Continent		**n**	**Men**	**Women**	**Children**
Africa	14,646	12	10	19	1
Asia	38,156	103	32	30	8
Europe	20,833	81	139	135	59
North America	* 1,500	0	1	0	0
Oceania	1,820	7	2	2	0
South America	2,838	21	21	20	4
Total	**79,793**	**224**	**205**	**206**	**72**

Table 7: Reported number of collectors involved in wild collection projects for each continent, as well as number of wild collection projects (n) for which answers were provided in the questionnaires. Reported number of projects involving men, women and children, 2005. * Authors' own estimation: mainly wild rice and maple projects.

Certification bodies indicated that men and women are involved in 205 and 206 organic wild collection projects world-wide respectively. Children are involved in 72 organic wild collection projects (see Table 7).

The name of the holder of the certificate on organic wild collected products gives an indication of to what extent collectors are organised and/or involved in export. Information on who the holder of the certificate is, was provided for 144 organic wild collection projects. Of these, some certificates were held by several kinds of operators. The relative share of certificates held by one or several kinds of operators is as follows:

- 65% of the projects had the export company as one of the holders of the certificate.
- 24% of the projects had the manufacturing company as one of the holders of the certificate.
- 18% of the projects had the importing company as one of the holders of the certificate.
- 17% of the projects had the collector group as one of the holders of the certificate.
- 8% of the projects had the wholesaler as one of the holders of the certificate.

It is interesting to note that although the highest number of collectors was reported in Asia, no collector group was reported as holder of the certificate in that region.

4.5 Regional overview

4.5.1 Africa

Reported registered collection areas rank Africa as the region with the second largest registered organic wild collection area in the world. However, only few organic wild collected products show significant harvested volumes. The more important products in terms of certified quantities are sheabutter (*Butyrrospermum parkii*), rosehips (*Rosa* spp.), gum arabic (*Acacia Senegal*), argan oil (*Argania spinosa*) and honeybush (*Cyclopia* spp.) (Table 9). The two countries, for which the largest registered collection areas were reported (*i.e.* Kenya and Zambia) only have few certified organic collection activities (Table 8). For example, the large collection area in Zambia is registered as an area for collection of wild bee honey. Wild bee honey is to a certain extent one of the borderline cases falling between wild collection and husbandry, as honey gatherers sometimes use bee hives as is the case in apiculture. In Kenya, a relatively small part of the wild collection area is reported registered for collection of wild bee honey, whereas the larger part is for essential oils.

Africa	**Number of projects**	**Registered area (ha)**	**Harvested quantity (t)**
Country			
Burkina Faso	3	15,800	2,415
Lesotho	1	100	1,000
Chad	1	-	400
Zambia	2	9,067,500	322
South Africa	3	1,904,600	316
Egypt	1	442	160
Ghana	1	1,000	115
Morocco	8	7,000	25
Uganda	2	635,000	30
Namibia*	1	728,493	2
Kenya	2	15,080,028	-
Madagascar	-	-	-
Total	**25**	**27,439,963**	**4,785**

Table 8: Reported number of wild collection projects, registered area (ha) and harvested quantities (t) in Africa, sorted by harvested quantity, descending, 2005. * Data from 2004.

In Africa, some of the organic wild collected products are found in certain areas only. Examples are honeybush (*Cyclopia spp.)* (South Africa), rooibush (*Aspalathus linearis*) (South Africa), devil's claw (*Harpagophytum procumbens*) (Namibia, South Africa) and argan tree (*Argania spinosa*) oil (Morocco).

In the past, sheabutter, honeybush and rooibush have been sourced from the wild only, but these products are increasingly produced from cultivated areas in order to meet growing demand.

Product		Area (ha)	Quantity (t)	Main producing countries and their reported harvested quantities (t)
Scientific name	**Common name**			
Butyrrospermum parkii, fructus	Shea butter	646,000	2,530	Burkina Faso (2,415), Ghana (115)
Rosa canina, fructus	Rosehip	100	1,000	Lesotho (1,000)
Acacia senegal	Gum arabic	-	400	Chad (400)
	Honey	9,067,500	320	Zambia
Cyclopia spp.	Honeybush	-	150	South Africa (150)
Senna alexandrina, folia	Senna	25	144	Egypt (144)
Aspalathus linearis	Rooibush	-	100	South Africa
Harpagophytum procumbens	Devil´s claw	2,628,493	67	South Africa (65), Namibia (2)
Lates niloticus	Nile pearch	-	30	Uganda
Argania spinosa, fructus	Argan nut	2,000	25	Morocco (25)
Tilia spp., *folia*	Lime tree leaves	417	16	Egypt (16)
Adansonia digitata and Sclerocarya birrea	Baobab and Marula oil	-	2	Zambia
Agathosma betulina	Buchu	-	1	South Africa
Artemisia spp.		-	-	Morocco
Caparius spinosa	Caper	-	-	Morocco
Olea europaea	Olive	-	-	Morocco
	Beeswax	9,067,500	-	Zambia
Pelargonium asperum	Bourbon geranium	-	-	Madagascar
Cinnamomum zeylanicum	Cinnamon bark	-	-	Madagascar
Ravensara aromatica	Ravensara oil	-	-	Madagascar
Tanacetum anuum	Blue chamomile	-	-	Morocco
Total			**4,785**	

Table 9: Products with largest harvest quantities reported in Africa, collection area (ha) and harvested quantities (t), as well as countries with largest reported harvest quantities, sorted by harvested quantity, descending, 2005.

4.5.2 Asia

China is the country in Asia for which the largest organic wild harvested quantities were reported. Products such as bamboo shoots (*Bambusum vulgaris*), walnuts (*Juglans* spp.), tea seeds (*Camellia* spp.), seaweed, berries and mushrooms are collected in large quantities (Table 6). The bamboo agro-industry is particularly important in some Asian countries. In addition to bamboo shoots being grown for human consumption, bamboo is also used for non-food purposes (*e.g.* furniture or construction material). Therefore, the majority of bamboo products are not collected from the wild, but are produced. Some of the organic wild bamboo shoots could also be from very extensive agro-forestry systems.

In Asia, the ten organic wild collected products, of which largest quantities are collected, represent more than 80% of the reported total collected quantity. Table 10 provides an overview of reported number of projects, registered area and harvested quantity. It should be noted that for large wild collection areas in the western and northern parts of Azerbaijan, where different wild crops are traditionally collected, it has not been possible to get information on the certification status. It is reported that in India the organic wild collection area will double during the year 2006[19]. No organic wild collection has been identified in Japan. Organic seaweed from Japan is said to be from cultivation.

[19] Personal communication with Ramesh Harve, ICCOA (March 2006).

	Number of projects	Registered area (ha)	Harvested quantity (t)
Country			
China	103	2,252,900	135,885
Turkey	20	191,131	941
India	6	10,000	523
Indonesia	1	-	500
Syria	1	400	361
Nepal	3	48,006	100
Uzbekistan	1	500,000	76
Laos	1	-	25
Thailand	2	11,784	13
Armenia	1	111	2
Azerbaijan*	1	3,200,000	-
Kyrgyzstan	1	40,000	-
Lebanon	2	6,800	-
Vietnam	1	44	-
Iran	1	-	-
Sri Lanka		-	-
Total	**145**	**6,261,176**	**138,426**

Table 10: Reported number of projects, registered area (ha) and harvested quantities (t) in Asia. Sorted by harvested quantities, descending, 2005. * Certification status of the collection area is not clarified.

Product		Area (ha)	Quantity (t)	Main producing countries and their reported harvested quantities (t)
Scientific name	**Common name**			
Bambusum vulgaris	Bamboo shoots	507,076	70,873	China (all)
Camellia sinensis, semen	Tea seed for oil	16,755	6,162	China (all)
Juglans sigillata	Iron walnut	667	6,000	China (all)
Ulva lactuca	Green laver, sea lettuce	593	5,450	China (all)
Agaricus hortensis	White mushroom	-	4,800	China (all)
Vaccinium vitis-idaea	Lingonberry	118,255	4,139	China (all)
Vaccinium uliginosum, fructus	Bog bilberry	76,755	3,472	China (all)
Pinus spp., semen	Pine nut, kernels	114,304	2,820	China (2,799), Turkey (21)
Camellia cordifolia	Camellia cordifolia	10,495	2,758	China (all)
Pinus nigra, semen	Austrian pine seeds	7,423	2,596	China (all)
Total			**109,070**	
Total remaining countries			**29,356**	
Total Asia			**138,426**	

Table 11: Reported products, harvested quantities (t) and collection area (ha) in Asia, as well as countries with largest reported harvest quantities, sorted by harvested quantity, descending, 2005.

4.5.3 Europe

The information obtained from certification bodies and other sources covers most of the European countries. However, for some countries, which has a tradition for organic wild collection activities, like for example Italy and Norway, only little quantitative information was obtained.

Largest organic wild collection areas were reported for Finland and Romania. However, this observation should be seen in the context that it was not possible to correct for multiple certifications of a given area, which is believed to be an explanation for the relatively large wild collection area, as well as harvested quantities, reported for Romania. In Finland the largest wild collection area is located in Lapland. Wild collection offers an income for one or two months a year for some Finish families, where every person has the right to collect products in private and public forests[20]. In the other Northern European countries, wild mushrooms and berries were reported generally to be the most important organic wild collected products. However, in spite of the large collection area for certified organic wild collected products, reported harvested quantities are comparatively small.

In Europe, organic wild collection plays a significant role, particularly in some Eastern European and Balkan countries, including Romania, Russia, Bulgaria, Serbia and Montenegro, Bosnia and Herzegovina and Albania (see Figure 4 and Table 12). Collection of certified organic MAPs has a particular economic importance in these countries. In terms of quantity, wild berries and mushrooms are the dominating wild collected products. According to some CBs wild collection projects are coming up in Albania.

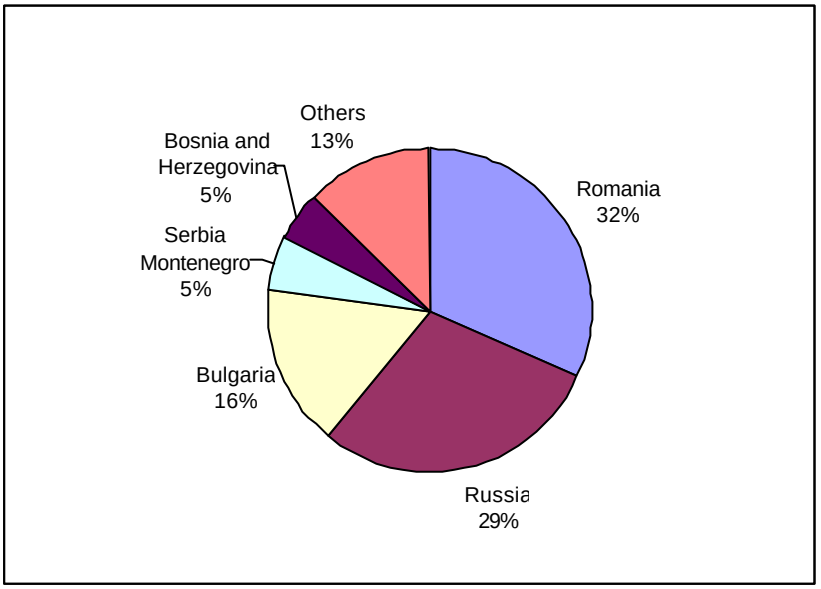


Figure 4: European countries' relative share of total reported harvested quantities in Europe, 2005.

CBs from Ireland and Scotland reported that products found naturally in wild areas of large certified organic estates are offered to the market. However, these products are not labelled as wild collected products, but supplied as organic. It has also been reported that some Irish seaweed is approved by organic certification bodies as an agricultural input, *e.g.* soil conditioner and fertilizer. In Iceland, certified organic wild seaweed, such as kelp, is collected and offered to the food, food supplement and non-food industries. Wild collection activities are rare in densely populated countries like Germany and Belgium. However, bear's garlic (*Allium ursinum*), a popular product during last years, is collected for commercial purposes in these two countries.

[20] The same right is given in Sweden. In Finland income from sales of wild collected crops is tax-free. In Sweden tax must be paid of income from sales of wild collected crops which exceeds EUR 560.

Country	Number of projects	Registered area (ha)	Harvested quantity (t)
Romania	17	15,927,862	10,320
Russia	5	859,070	9,530
Bulgaria	17	447,775	5,282
Serbia and Montenegro	10	520,200	1,772
Bosnia and Herzegovina	8	45,967	1,564
Albania	7	140,551	1,183
Sweden	2	- -	749
Ukraine	3	207,000	640
Poland	5	113,201	519
Moldova	1	-	400
Hungary	2	600	397
Finland *	1	7,507,614	312
Macedonia	3	559,200	234
Croatia	3	-	210
Spain	2	184,972	101
Germany	12	75	78
Czech Republic	2	500	30
France	4	100	28
Greece	9	136	16
Estonia	1	119	-
Iceland	2	200,305	-
Portugal	7	80	-
Denmark	1	375	-
Austria	2	250	-
Belgium	1	4	-
Norway		-	-
Ireland		-	-
United Kingdom		-	-
Total	**127**	**26,715,956**	**33,365**

Table 12: Number of reported certified organic wild collection projects, registered areas (ha) and harvested quantities (t) per country, sorted by quantities, 2005. * Figure from 2004.

The ten organic wild collected products in Europe, of which the largest quantities are collected, represent about 69% of the total reported harvested quantities of organic wild collected products in Europe. Wild berries such as blueberries, lingonberries, cranberries, blackberries and raspberries are the products collected in largest quantities, followed by rosehip, edible mushrooms (such as king bolete), seabuckthorn and blackthorn (Table 13).

Product		Area (ha)	Quantity (t)	Main producing countries and their reported harvested quantities (t)
Scientific name	**Common name**			
Vaccinium myrtillus, fructus	Blueberry	13,169,924	5,145	Russia (1,899), Bulgaria (948), Romania (852), Sweden (544), Poland (376), Ukraine (336), Finland (140)
Vaccinium vitis-idaea, fructus	Lingonberry	1,430,500	3,912	Russia (2,730), Ukraine (304), Bulgaria (290), Romania (240), Sweden (195), Finland (151)
Rosa canina	Rosehip	11,791,561	3,268	Romania (3,051), Bulgaria (120), Albania (50), Macedonia (10), Serbia and Montenegro (5)
Vaccinium oxycoccus	Small cranberry	200,000	3,000	Russia (3000)
Malus sylvestris	Wild apple	285,900	1,675	Serbia and Montenegro (1500), Macedonia (100), Albania (72), Romania (2)
Rubus fruticosus, fructus	Blackberry	9,889,641	1,390	Romania (668), Bulgaria (583), Serbia and Montenegro (135)
Rubus idaeus	Raspberry	9,666,555	1,369	Bulgaria (821), Romania (532), Croatia (12)
Boletus edulis	King bolete	1,065,640	1,137	Romania (987), Bosnia and Herzegovina (112), Russia (22), Spain (5), Serbia and Montenegro (4)
Hippophae rhamnoides	Sea buckthorn	2,325,402	1,043	Romania (692), Russia (350)
Prunus spinosa	Blackthorn	9,568,118	1,022	Romania (800), Bulgaria (202), Macedonia (10), Albania (10)
Total			**22,960**	
Total remaining countries			**10,405**	
Total Europe			**33,365**	

Table 13: Organic wild collected products with largest reported harveste d quantities in Europe; reported collection area (ha) and harvested quantities (t), sorted by harvested quantities, descending, 2005.

4.5.4 Latin America

Brazil nuts (*Bertholletia excelsa*), collected in the Amazone rainforest areas in Bolivia, Brazil and Peru, are the most important organic wild collected product in Latin America. Bolivia produces the largest amount of organic brazil nuts[21]. Other products, which are important in terms of harvested weight, are coco-nuts (*Cocos nucifera*), hearts of palm (*Euterpe oleracea*) and rosehips (*Rosa canina*) (Table 15). The largest registered area, which was reported in the survey, is in Bolivia (Table 1414).

Organic wild rosehips are reported from Chile and Argentina. Chile has a diverse range of organic wild collection activities of commercial importance, which include the collection and export of rosehips, lime tree leaves (*Tilia* spp.), St. John's wort (*Hypericum perforatum*), hawthorn (*Crataegus monogyna*) and blackberries (*Rubus fruticosus*).

[21] Some of the Brazil nut projects also have fair trade certification.

Large areas in the Brazilian rainforest are classified as areas of “agroextrativismo”, a term that in principle should not be equated with wild collection but rather a very extensive agro-forestry system.

Nevertheless, it offers income possibilities in particular for marginalized farmer families living in these areas. Unlike the brazil nut tree, babassou or acai palms can be cultivated and thus are grown in the wild as well as in plantations.

Latin America	Number of projects	Registered area (ha)	Harvested quantity (t)
Country			
Bolivia	4	722,387	12,572
Dominican Republic	3	2,199	5,386
Chile	5	8,728	3,806
Brazil	6	367,851	2,798
Peru	3	156,335	1,404
Guayana	1	-	850
Ecuador	1	5,300	60
Colombia	1	120	-
Guatemala	1	83,500	-
Total	**25**	**1,346,420**	**26,876**

Table 14: Reported number of projects, registered area (ha) and harvested quantities (t) in Latin America, sorted by harvested quantity, descending, 2005.

Product		Harvest area (ha)	Quantity (t)	Main producing countries and their reported harvested quantities
Scientific name	**Common name**			**(t)**
Bertholletia excelsa	Brazil nut	1,234,528	16,073	Bolivia (12,571), Brazil (2,097), Peru (1,404)
Cocos nucifera	Coconut	1,937	5,175	Dominican Republic (all)
Rosa canina	Rose hip	8,412	3,514	Chile (all)
Euterpe oleracea	Palm hearts	1,682	1,365	Guyana (850), Brazil (514)
Orbignya speciosa	Babassou	10,218	187	Brazil (all)
Rubus multiflorum	*	120	100	Chile (all)
Crataegus monogyna	Hawthorn	1,800	93	Chile (all)
Persea americana L.	Avocado pear	101	83	Dominican Republic (83)
Coffea arabica L.	Coffee beans	39	69	Dominican Republic (all)
Suillus luteus	Bolete	5,300	60	Ecuador (all)
Azadirachta indica	Neem tree	72	46	Dominican Republic (all)
Tilia officinalis	Lime tree	2,400	43	Chile (all)
Hypericum perforatum	St. John´s wort	1,800	30	Chile (all)
Rubus fruticosus	Blackberry	1,800	26	Chile (all)
Colocarpum zapota	Mamey/ zapote	14	7	Dominican Republic (all)
Terminalia catappa	Indian almond	5	4	Dominican Republic (all)
Moringa oleifera	Horseradish tree	2	2	Dominican Republic (all)
Oenocarpus bataua	Seje oil	100	-	Colombia
Ananas comosus	Pineapple	20	-.	Colombia
Brosimum allicastrum	Ramon nut	83,500	-.	Guatemala
Myrciaria dubia	Camu camu	145	-	Peru
Pimenta dioica	Allspice	83,500	-.	Guatemala
Prosopis juliflora	Mesquite	-	-.	Peru
Uncaria tomentosa	Cat´s claw	-	-	Various countries
Arachis hypogaea	Wild peanut	-	-.	Ecuador
Paullinia cubana, semen	Guaraná	-.	-	Brazil
Total			**26,876****	

Table 15: Products with reported largest harvest quantities, harvested quantities (t) and (t) collection areas (ha) in Latin America, as well as countries with largest reported harvest quantities, Sorted by harvested quantity, descending, 2005. * Common name not clarified. ** Discrepancy due to rounding of figures.

4.5.5 North America

Most of the information from North America (Canada, United States) used for this study is from secondary sources as the response rate from CBs was low in that region. The most important commercially used organic wild collected products were reported to be wild rice (*Zizania aquaica*), maple syrup (*Acer saccharum*), wild blueberries (*Vaccinium myrtillus*) and blue green algae (*Aphanizomenon flos aquae*) from Lake Klamath in Ontario, United States (Table 17). Wild rice and maple syrup can be classified as products coming from extensive organic production as, in both cases, some form of management (especially in the Upper Great Lakes region) takes place[22] (Table 16).

[22] Some US organic certification bodies have developed specific standards for maple syrup and wild rice.

North America	No. of projects	Registered area (ha)	Total quantity (t)
Country			
Canada	620	150,000	-
US	28	30,000	102
Total	**648**	**180,000**	**102**

Table 16: Number of reported wild collection projects, registered area (ha) and harvested quantities (t) in North America, 2005.

Wild blueberries are one of the few native berries of North America and are very popular in the United States because of claimed health properties. However, though the name may suggest otherwise, most of the wild blueberries offered are from cultivated lowbush (wild) blueberry varieties and not from wild collection, as the name may suggest.

Unlike in Canada, organic wild collection in the United States is of less significance. Products like ginseng, goldenseal, blue and black cohosh, bloodroot or willow bark naturally occurring in North America, and presently used as medicinal plants, are pre-dominantly cultivated.

Product		Area (ha)	Quantity (t)	Main producing countries
Scientific name	**Common name**			
Acer saccharum	Maple syrup	-	-	USA
Serenoa spp.	Saw palmetto	134	57	USA
Zizania aquatica	Wild rice	16,000	-	Canada
Aphanizomenon flos aquae	Blue Green Algae	2,024	45	USA (Lake Klamath)
Dioscorea villosa	Wild yam	-	-	USA
Thuja occidentalis	Cedar leaf	-	-.	Canada
Picea balsamea	Balsam fir	-	-	Canada
Ledum groenlandicum	Labrador tea	-	-.	Canada
Pinus resinosa	Red pine	-	-	Canada
Picea mariana	Black spruce	-	-	Canada
Tsuga canadensis	Hemlock spruce	-	-	Canada
Picea glauca	White spruce	-.	-	Canada
Total			**102**	

Table 17: Reported products, harvested quantities (t) and collection area (ha) in North America, as well as countries with largest reported harvest quantities, sorted by harvested quantity, descending, 2005.

4.5.6 Oceania

In Australia, organic certification of game has been reported. Little additional information is available from Oceania except that seaweed, sandalwood and noni are of commercial importance (Table 18). Data provided by CBs on registered areas was very limited (Table). The majority of wild collection projects seem to be in the beginning of implementation.

Oceania	No. of projects	Registered area (ha)	Harvested quantity (t)
Country		**2005**	**2005**
Australia, excluding Tasmania	4	-	-
Tasmania	1	-	-
New Caledonia	1	-	-
New Zealand	1	50	-
Fiji	2	16,040	20,200
Total	**9**	**16,090**	**20,200**

Table 18: Reported number of projects, registered areas (ha) and harvested quantities (t) in Oceania, sorted by harvested quantities, descending, 2005.

Product		Area (ha)	Quantity (t)	Main producing countries
Scientific name	**Common name**			**(t)**
-	Various herbs	-	-	Australia
-	Game	-	-	Australia
Morinda citrifolia	Noni fruit	90	20,000	Fiji, New Zealand
Santalum album	Sandalwood oil	-	-	New Caledonia
-	Sea weed	-	-	Tasmania/ Australia
Themeda triandra	Kangoroo grass	-	-	Australia
-	Wild honey	-	-	Australia
Mangifera indica	Mango	4,000	177	Fiji
Psidium guava	Guava	12,000	23	Fiji
Total			**20,200**	

Table 19: Reported products, harvested quantities (t) and collection area (ha) in Oceania, as well as countries with largest reported harvested quantities, sorted by harvested quantity, descending, 2005.

4.6 Sustainability of wild collection

Certification bodies were asked to assess the efficiency of their tools for sustainability monitoring in organic wild collection projects. Certification bodies provided information on this issue for 144 different organic wild collection projects by ranking the efficiency on a scale from 1 (low efficiency) to 6 (high efficiency) (Table 20). About 60% of the answers indicated that efficiency of sustainability monitoring was "sufficient". The remaining 40% indicated that the efficiency of sustainability monitoring was " high".

	Low					High	
	1	**2**	**3**	**4**	**5**	**6**	**n**
Africa	0	0	12	1	5	2	20
Asia	0	0	14	7	1	1	23
Europe	0	0	19	26	10	13	68
Latin-America	0	0	0	1	0	0	1
North-America	0	0	1	5	1	1	8
Oceania	0	0	1	4	12	7	24
Total	**0**	**0**	**47**	**44**	**29**	**24**	**144**

Table 20: CB's own assessment of efficiency of tools for monitoring sustainability using a scale from 1 (low) to 6 (high).

5. Market Data on Organic Wild Collected Products

Organic wild collected products are increasingly being used as natural products in different segments of the global market for instance in organic food, food supplements, natural personal care, natural remedies, natural textiles, industrial uses, and others. As consumers' concern about health and well-being seems to be increasing, demand for natural ingredients is growing in all these mentioned market segments Organic certification is not necessarily a prerequisite for entering the market.

5.1 Production value of organic wild collected products

The total value of organic wild collected products is estimated to be between EUR 630 and 830 million in 2005. This market value is based on estimated F.O.B. prices[23] and the assumption that about 40-60% of total certified organic wild collected product quantities have been reported in this study.

FOB prices are estimated to be in the range of EUR 1 - 20 per kg depending on the kind of product. For products without identified price indication an assumed price of EUR 3 per kg has been used.

Estimation of the total value of organic wild collected products worldwide is difficult for several reasons. In particular it is difficult obtaining FOB prices for each product group in various parts of the world. Another issue is that a proportion of certified wild harvested products is not sold as organic but as a conventional product to domestic and international markets.

The large quantity of certified wild bamboo shoots in China illustrates one of the problems connected with estimating the value of organic wild crops. In 2005, more than 70,000 t of bamboo shoots were certified organic. However, markets for organic products absorbed a much smaller quantity of organic bamboo shoots. The biggest import market for bamboo shoots worldwide is Japan, where about 6,000 t were certified organic under JAS regulation and imported into Japan[24]. However, a much larger quantity was sold in China for a significantly lower price.

As a consequence the difference between the value of certified organic wild collected products sold in non-organic markets and those sold in organic food and natural product markets has to be taken into consideration.

As shown in Figure 6, next section, it is estimated that 45% of all certified organic wild collected products were sold in the organic food market in 2005. Assuming that retail prices are three times higher than FOB prices the estimated retail food market value is then at least around EUR 855 million. Certified organic wild collected products would then represent at least 3.3% of the global organic retail food market value, estimated at EUR 25.5 billion in 2005[25].

[23] FOB prices were estimated to be around 40% of wholesale prices. Wholesale prices were obtained from main wholesalers.
[24] Personal communication with Kenji Matsomoto, JONA (Japan).
[25] Source of estimated global organic retail food market value: Organic Monitor (2006b).

The value of different wild collected product categories reflects that the category "other products" is dominated by bamboo shoots, which represents 28% of the reported value of organic wild collected products (Figure 5). The second most important category in terms of value is "nuts", which is dominated by brazil nuts. Conventional statistics indicate a total harvest of about 20,000 t per year[26]. However, certification bodies have reported certification of about 16,000 t (shelled brazil nuts), which would indicate an organic production share of 80%. The quantity sold as organic from wild collection is assumed to be significantly lower.

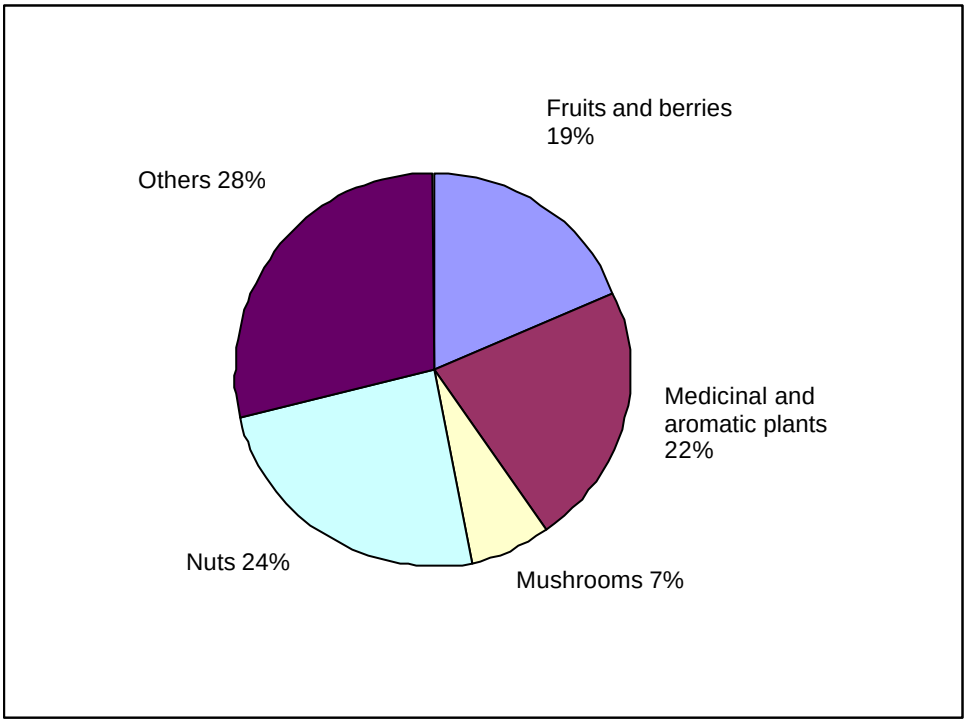


Figure 5: Share of product categories in estimated total value (FOB prices) of world wide production of certified organic wild collected products, 2005.

Some products fit into more than one category. For example, Rosehip (*Rosa canina*, *fructus*), was put into the category of MAPs because large parts of the harvest are used for tea.

5.2 Markets for organic wild collected products

The majority of organic wild collected products is sold in the organic food market. Based on information provided by 123 companies the relative size of different market segments is estimated (). As mentioned global sales of organic food products are in the range of EUR 25 - 30 billion.

Of the identified market segments for wild collected products, the organic food segment is the largest one, followed by the natural personal care products segment. The latter is estimated to reach global sales value of EUR 8.3 billion in 2006[27]. However, only a minor share of the natural personal care products is included in private sector certification programmes (like for example those of the French organisation Cosmebio[28] or the German

[26] Source: "Waren-Verein der Hamburger Börse e.V. (2006): Jahresbericht 2005", among others.
[27] Source: CBI (2005).
[28] See http://www.cieldazur.com/fr/cosmebio.htm (10/04/2006).

organisation BDIH) requiring the use of certified organic ingredients (including products from the wild).

The value of the market for certified organic natural personal care products is believed to be significantly lower than the value of the total market for natural personal care products, and may be estimated at EUR 1 to 3 billion[29]. Large companies using natural ingredients for their personal care products, like the market leader The Body Shop source only a part of their natural ingredients (wild or cultivated) from certified organic origins. As in the organic food segment, fair-trade and social issues are becoming increasingly important in the market for natural ingredients for personal care products[30]. For instance, the market leader of the natural cosmetic industry in Brazil, Natura[31], focuses more on social and bio-diversity issues than on organic certification when sourcing ingredients.

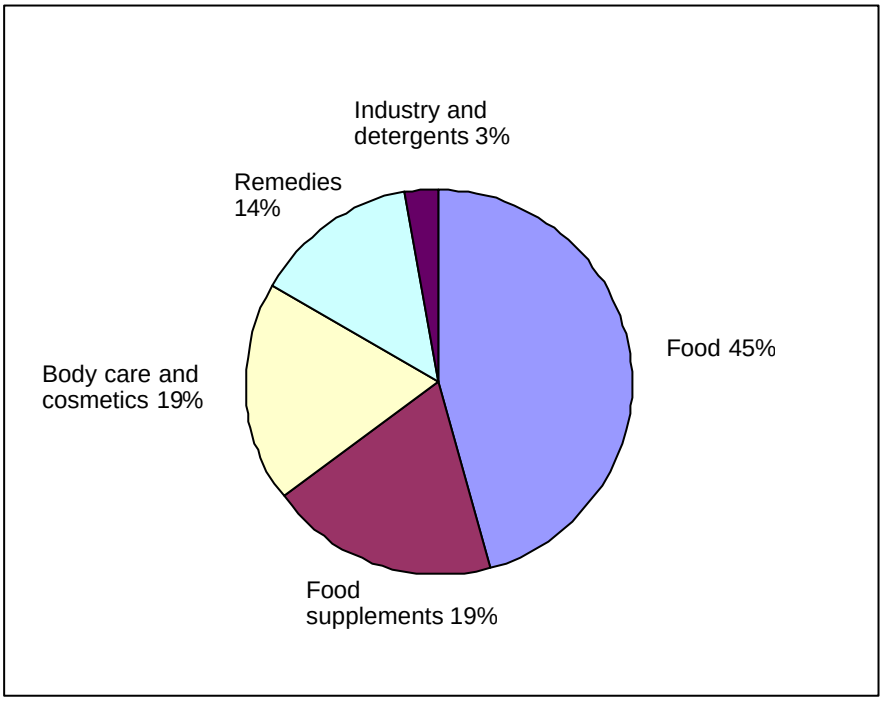


Figure 6: Relative size of different market segments for organic wild collected products.

It is believed that with growing markets for food supplements, natural personal care products, natural remedies etc., the demand for natural ingredients (including wild collected products) will continue growing. It is also believed that the demand for organic certification will increase, and that it will increasingly become a tool for market positioning and product differentiation.

5.3 Organic wild collected products market destination

In order to assess the importance of different markets, applications for certification of wild collected products can be used to give a rough indication of the market demand in specific countries or regions. Companies and CBs were asked for information on which standards, they certify marketed wild collected products against (for example the EU regulation, the

[29] Own estimation, based on the following different sources of information: Ahlers (2004), Organic Monitor (2006a), CBI (2005).
[30] Body Shop for excample has developed a set of Fair Trade Guidelines, their so-called Community Trade programme. More information is available at http://www.thebodyshop.com/bodyshop/values/support_community_trade.jsp.
[31] See http://www2.natura.net/Web/Br/Home/src/ (10/04/2006).

JAS, the NOP, etc). The answers showed that most of the identified organic wild collected products are certified according to the EU regulation on organic agriculture. However, as US certification bodies are not sufficiently represented in this survey, it is estimated that the real difference between the US and the EU market is less than indicated by Table 21.

	Certification bodies (%)*	Companies (%)
EU regulation	67.1	54.3
NOP	15.8	20.8
JAS	2.5	8.9
Various national regulations	12.1	8.6
Various private standards	2.6	7.4
n	1,663	269

Table 21: Relative share of indications from certification bodies and companies as to which standards marketed wild collected products are certified against, as well as total number of indications from certification bodies and companies on standards certified against (n). * Total exceeds 100% due to rounding of figures.

Companies were also asked for information on the destination countries of the organic wild collected products that they dealt with. However, answers were mostly provided as to the destination region, for example "Europe", "Asia" or "World" rather than single countries. 43% of the respondents indicated Europe (or European countries) to be the target market. North America accounted for 31% and Asia for 26% of all these answers (see). Single countries have been mentioned in 212 cases, of which the United States (57), Japan (29) and Germany (27) were mentioned most frequently. European countries were mentioned in 76 cases, indicating that Europe is an important market for organic wild collected products. It is interesting to note that in Asia, Japan, Taiwan and Korea have been reported as destinations for organic wild collected products. A large proportion of the imported organic wild collected products sold to these markets seems to be exported from China.

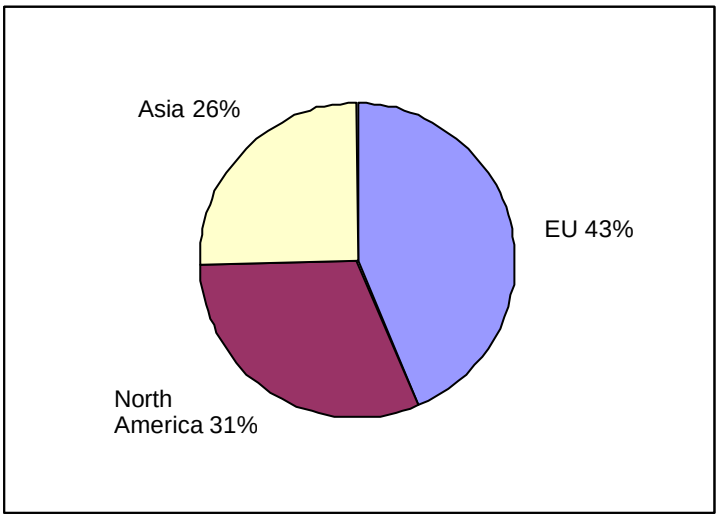


Figure 7: Relative share of reported destination regions for organic wild collected products 2005.

5.4 Organic wild collected product preferences and images

Interviews with companies have shown that because of lower price, organic wild collected products are preferred to similar products originating from cultivation. Wild collection would also encourage traders to accept more irregular product quality and seasonal variations. Another reason mentioned by some companies for accepting lower quality of wild collected products was positive social impact of wild collection in regions, which have no or few income alternatives. However, in order to ensure supplies in the long-term, some companies have switched from buying products collected in the wild to cultivated products. Some companies, like for instance Weleda from Germany, have a strategy of supporting domestication of wild collected products in order to promote their conservation.

In organic food retail markets, products labelled with indications that they originate from the wild are generally hard to find. Examples of food products with such indications are some single-ingredient products, such as brazil nuts, wild rice, wild fish and forest mushrooms. Unlike in the food market, the term "wild" is more systematically used as a marketing tool in the markets for cosmetic and pharmaceutical natural ingredients. The rationale for using the term "wild" in marketing is that consumers perceive wild collected products as more "natural" than farmed products. The positive image of the natural environment is used to add value to a product, as illustrated by products from the Amazon, for example. This kind of marketing takes place in both organic and non-organic markets.

5.5 Selected case studies

5.5.1 Argan oil from Morocco

The argan tree (*Argania spinosa)* is endemic to south-west Morocco. It covers more than 850,000 ha and is the dominant species within the provinces of Agadir, Taroudant, Tiznit and Essaouira. The argan tree's deep roots help stabilise the arid ecosystem and prevent desertification. The ecological importance of this habitat was recognised by UNESCO, and the "Arganeraie Biosphere Reserve" was created in 1998.

Figure 8: Argan forest. Source: "Project Argan"32/GFA Consulting Group.

The fruit of the tree yield a very valuable fatty oil that is traditionally used for cooking and body care. European and Moroccan scientists recently confirmed that the oil from the kernels have desirable nutritional and cosmetic properties. There has been a large increase in the demand for argan oil, especially from European countries, in recent years.

Uses

Traditionally, the Berbers of the argan forest region have relied on argan oil as a key element of their diet, as a skin and hair moisturizer, and as a treatment for minor wounds and ailments from rashes to diabetes[33]. Recent technical analyses carried out by European cosmetic companies confirmed at least some of the traditional Berber claims about the argan oil's nutritive, dermatological and medicinal properties resulting in a large increase in interest from the health food and cosmetic sectors.

Traditionally, argan oil extraction is very labour intensive. After collecting and drying the fruits, women use shaped stones to remove the pulp from the argan stone. The pulp is fed to the livestock. The fruit stone must be cracked open to reach the kernels, which contain the oil. The kernels, after being roasted, are crushed into an oily paste, which is kneaded to extract the oil from the paste. While the cracking is still done by hand, there are now many small expeller presses in use that extract the oil on a semi-industrial scale. The argan fruits are used for the following purposes:

[32] The full title of the project is "Assist the improvement of income possibilities for women and the sustainable management of argan trees in the south-west region of Morocco.
[33] Lybbert et al. (2004).

- Argan culinary oil, which is produced from the roasted nuts.
- Argan cosmetic oil, which is extracted directly, without roasting or heating.
- Amlou paste, a nut butter, which is obtained from the press cake after oil extraction, sweetened with honey and used as spread for bread.
- Fruit pulp and press cake for animal feed.
- The shells as a fuel.

Figure 9: Cracking argan nuts. Source: "Project Argan"/GFA Consulting Group.

There are three major groups involved[34]:

1) The collectors: 3,500 women are organised in co-operatives of which some specialise in the collection and cracking of the fruits. Most engage in the more lucrative activity of oil extraction. There are about 30 co-operatives of which a fair proportion are certified as organic. The main driving force for commercialisation is the Union of Women's Co-operatives of the Arganeraia (Union des Coopératives des Femmes de l'Arganeraie/ UCFA).

2) Local traders: local traders play an important role in purchasing fruit from the collectors, bulking-up and supplying the fruit to extraction units. Another group of traders is involved in organising the oil production. They distribute the fruits or kernels to women who carry out the extraction at their homes and are paid by the oil delivered.

3) Extraction and trading companies: about 13 companies have emerged over recent years, some of which are certified organic. These companies are involved in extraction, and both local and international trade. Some of them have formed networks with branches in European countries, such as France, Switzerland and Germany.

Social and economic importance for the rural communities

The rural Berber community comprise nearly 1.5 million people, who live in the argan forest region. Their livelihood has for centuries depended on the multiple uses of the argan tree. Collecting of argan fruit and rearing livestock (especially goats) are the major economic activities in the region. The expansion of non-traditional, high-value argan oil markets that started in the late 1990's, has caused a re-organisation of the extraction and marketing of

[34] Personal communication with the Project Manager of the project *Assist the improvement of income possibilities for women and the sustainable management of argan trees in the south-west region of Morocco* implemented by GFA Consulting Group.

argan fruit and oil, especially by the creation of co-operatives. While in the region, the price of traditionally extracted argan oil has changed little[35], the women organised in co-operatives receive a much higher wage than their non-organised counterparts. Mrs. Zoubida Charrouf, a researcher at Rabat's Mohamed V University, says that "we have achieved to make argan oil known internationally. […] All our scientific research has raised awareness of the value of the oil"[36]. However, increased demand also led to the development of mechanised extraction and marketing processes with the result that traditional argan producers largely failed to enter the new, higher-return niches of the argan oil market. The wealthier, usually non-local recent entrants into these markets are the ones benefiting most from the expanded marketing of added-value argan oil, while the poorest benefit mainly through the generation of employment.

Production and trade figures

No accurate figures exist on production and export. In Morocco, there is no specific trade code for argan oil distinguishing it from other oils. According to a recent study, between 80,000 and 140,000 t of fruit are harvested annually, yielding between 2,300 and 3,900 t of argan oil[37]. Not all of the fruit is collected and processed, and only a small portion of this quantity is exported.

Two European certification bodies, Ecocert and Qualité France, currently certify the argan fruit. A registered area of 2,000 ha has been reported through the questionnaires. However, it is estimated that there are approximately 10 organic co-operatives and exporters with a total registered area of between 4,000 and 5,000 ha. This represents an annual production capacity of 100 to 150 t of argan oil. Only a small portion of this quantity is actually exported. In 2005, between 10,000 and 15,000 litres of organic argan oil (mainly for food purposes) was exported from Morocco[38]. As the EU regulation on organic production and labelling does not provide for cosmetic products, transaction certificates may not be issued for oil used in the cosmetic industry. Hence, the actual export quantity of argan oil[39] for both food and non-food purposes, may be a little higher.

Markets, prices and incomes

The export markets are the high value markets for argan oil (cosmetic and culinary uses). Some distributors also market argan oil as a high value product domestically to tourists and relatively wealthy Moroccans settled in urban areas. The internet is used intensively to market argan oil. About 200,000 sites appear from an internet search for *huile d'argan*[40]. The market segments for argan oil are described in Table 22.

The range of products that contain argan oil is extensive, especially in the cosmetic sector, and includes body oils, creams and soaps. Most organic argan oil is exported to France and Germany.

[35] Lybbert et al. (2002).
[36] Dick (2006).
[37] Personal communication with the Project Manager of the project ***Assist the improvement of income possibilities for women and the sustainable management of argan trees in the south-west region of Morocco*** implemented by GFA Consulting Group
[38] Personal communication with the Project Manager of the project Assist the improvement of income possibilities for women and the sustainable management of argan trees in the south-west region of Morocco implemented by GFA Consulting Group.
[39] Actually, both oil types may be consumed but because of the nutty flavour, the oil from the roasted nuts are preferred for the kitchen.
[40] Argan oil in French.

Market segment	Outlets/ volume/trend
Domestic	Sold along the road side, souks, in specialised shops and supermarkets. Probably over 90% of production, very commonly used; market saturated.
"Gourmet"	Sold in specialised shops, supermarkets and restaurants. Main market is France, where demand is increasing.
Cosmetics	Sold in pharmacies, beauty shops and supermarkets. Small but growing segment.
Organic (gourmet and cosmetic)	Most of the exporters of argan oil are currently certified organic. Argan oil is sold in Europe and North America. The market is growing.
Fair Trade	Probably good potential but the market is not yet well developed.
Ethnic, export	Mainly consumed by Moroccans in Canada, France and Spain and.

Table 22: Market segments for argan oil, information on main outlets, volumes sold and market trend for each segment. Source: Authors' own presentation based on personal communication with the Project Manager of the project *Assist the improvement of income possibilities for women and the sustainable management of argan trees in the south-west region of Morocco* implemented by GFA Consulting Group.

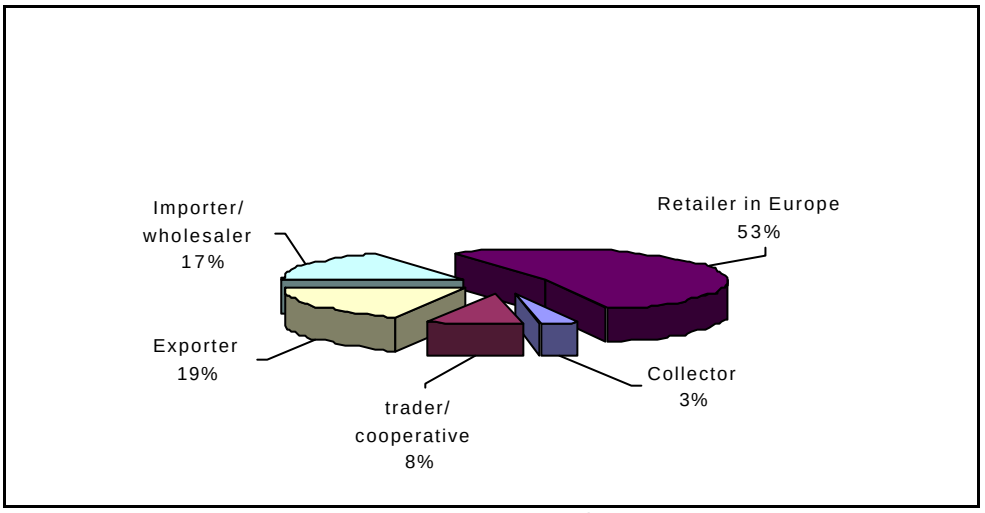


Figure 10: Supply chain operators' relative share of Argan Oil retail price, 2005. Source: Authors' own presentation based on personal communication with the Project Manager of the project Assist the improvement of income possibilities for women and the sustainable management of argan trees in the south-west region of Morocco implemented by GFA Consulting Group.

While the wages for women, especially in rural areas, barely exceed USD 1 per day, co-operative members are paid a rate of USD 2.50 per kg cracked nuts. On average, a woman can produce between 0.8-1 kg in a single 8 hour work day. This amounts to a daily wage of approximately USD 2-2.50, which is low in comparison with the rate men can get with their labour options (USD 3.50-4/day). However, it is very attractive to women since they have few, if any, alternative employment opportunities[41]. The women's relative share of the retail price achieved in the European market remains limited, though, as shown in Figure 10. It should be noted that traders have to pay transport, processing/bottling expenses and taxes from their share.

[41] Lybbert et al. (2002).

The retail price for traditionally extracted argan oil in Moroccan cities is around USD 8.50/litre[42]. On the internet the oil is offered as one of the rarest oils in the world and sold for as much as USD 100/litre.

A simplified illustration of the value chain for export of organic argan oil is shown in Figure 11.

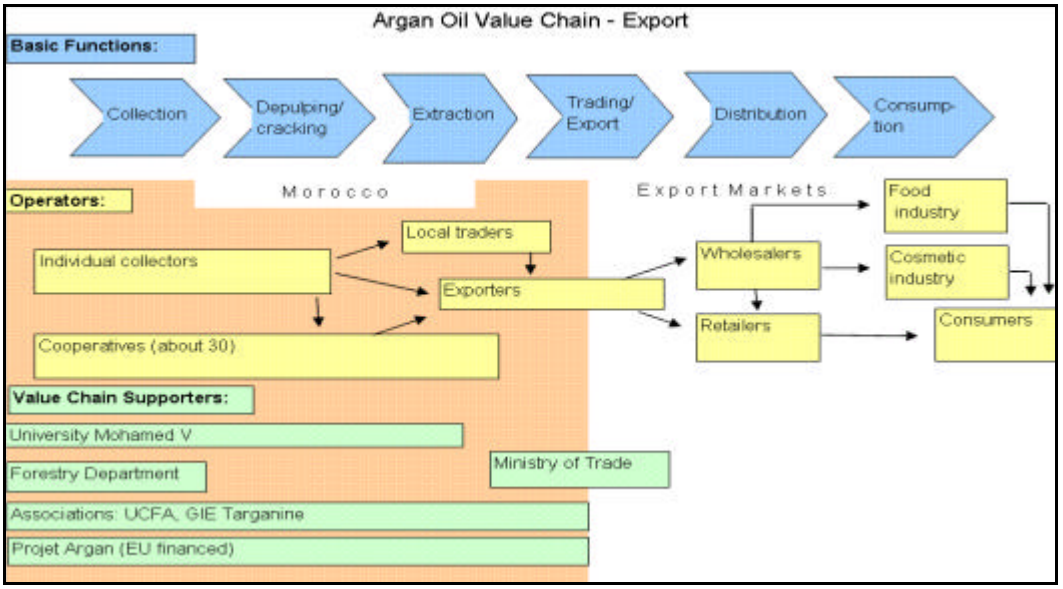


Figure 11: Value chain of organic argan oil production for export

Conservation aspects

Nearly half of the argan forest was destroyed during the 20th century because of increasing demand for high quality charcoal as well as cash crop production. Today, the greatest threat to the forests is the substantially increased numbers of livestock browsing and grazing[43]. Since the argan tree is the dominant species in this arid forest ecosystem, conserving this system will have far-reaching biodiversity benefits. Organic certification has improved the documentation of collection (through registration of collection) but it is not clear if increased prices have passed onto collectors. In some areas the management of the resource has improved because of the establishment of permanent enclosures for the protection of existing argan trees. This is financed through higher prices.

5.5.2 Devil's claw from Southern Africa

Description

Devil's Claw (*Harpagophytum procumbens*) is a medicinal plant native to the Kalahari open woodland and shrubland. The annual rainfall in the natural habitat varies between only 250 and 350 mm per year. This weedy perennial has a central taproot and storage roots branching off horizontally. These secondary tubers are the parts collected. Flowers are yellow-violet and leaves can only be found during the short rainy season. Growing wild, the desert plant needs to grow for four years or more before it is ready for harvesting. *Harpagophytum procumbens*

[42] Personal communication with the Project Manager of the project *Assist the improvement of income possibilities for women and the sustainable management of argan trees in the south-west region of Morocco* implemented by GFA Consulting Group.
[43] Lybbert (2000).

is mostly found in Namibia, Botswana and South Africa. Namibia is the main producing country.

Figure 12: Devil's Claw: flowering plant, tap root and storage tubers. Source: Dave Cole.

Uses

Traditionally, the tuber is used against fever, blood diseases, muscular aches and pains, digestion problems, headaches, allergies and as an analgesic during pregnancy. In addition, pulverized root material is used as an ointment for sores, ulcers and boils, and for difficult births. In the Western world, Devil's Claw is generally used to treat rheumatism and arthritis[44].

Figure 13: Slicing of Devil's Claw tubers. Source: Dave Cole.

Stakeholders

1) Intermediaries or middlemen

It is estimated that in Namibia there are between 50 and 100 intermediaries supplying exporters.Those intermediaries are in turn being supplied by an even larger number of intermediaries.

[44] von Willert, D. & Schneider, E. (2001).

2) Exporters

The number of exporters fluctuates from year to year, but it has been increasing over the last few years. In Namibia, there are at least 17 exporters who have exported two t or more of dried Devil's Claw and 9 exporters who exported 100 t or more. All exporters have additional sources of income and in most cases the income contribution of Devil's Claw exports is relatively small (between 2.5% and 25%)[45].

Other stakeholders include the Namibian Devil's Claw Working Group (NDCWG) and the Sustainably Harvested Devil's Claw project (SHDC), which operates in Namibia with the aim to assist locally organised groups of collectors in sustainable harvesting and marketing of Devil's Claw.

Social and economic importance for the rural communities

Traditional collectors of Devil's Claw are very poor and often landless. The wild harvesting is mostly done by women. The normal income of collectors in Botswana is about ZAR 500 a month (corresponding to around. USD 79), which is too little to survive[46]. South African collectors earned an income of ZAR 784 (corresponding to around USD 120) from Devil's Claw during the 2001-2002 season. In Namibia, intermediaries paid collectors USD 0.45 – 1.35 per kg for dried, sliced Devil's Claw. They sold it for USD 1.80 per kg to exporters, who then sold it on to the final buyers for USD 3.20 per kg[47].

For each kilogramme of dry material, 4-5 kg of tubers must be harvested. Collectors organised in organic projects, for example the SHDC project, receive a much higher price because the village communities sell the tubers directly to the exporters[48]. In Namibia, collectors received USD 2.50 from the exporters for 1 kg of organic produce. The exporters sold the produce at USD 4.20 per kg to the final buyers (see Table 23).

	Price received by collectors	**Price received by intermediaries**	**Price received by exporters**
Organic	2.50	-	4.20
Non-Organic (Average Price)	0.45 – 1.35	1.80	3.20

Table 23: Prices of organic and non-organic Devil's Claw in Namibia, 2002 (USD/kg). Source: Cole (2003).

Figures 13 and 14 illustrate the shares of the retail price at the different trade levels. As expected, the collectors capture the smallest part of the retail value of Devil's Claw, while the biggest share goes to the retailer. For non-organic Devil's Claw, the collectors' share is estimated as low as 2%, whereas for the Namibian collectors organised in an organic project, it reaches 6%. However, the quantity of organic Devil's Claw marketed is very small.

[45] Cole (2003).
[46] von Willert, D. & Schneider, E. (2001).
[47] Cole (2003).
[48] Lombard (2002).

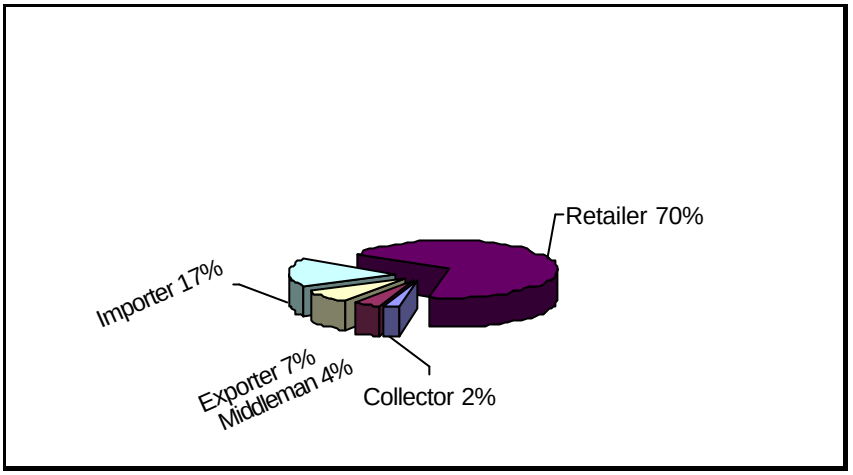


Figure 14: Supply chain operators' relative share of retail price of non-organic Devil's Claw. Calculations based on average prices. 2005. Source: Based on Cole (2003) and authors' own investigation.

Production and trade figures

With 1,000 t of exported Devil's Claw in 2003, Namibia is the most important exporter[49]. Exports from Botswana and South Africa are much lower. In 2001, around 18 t were exported from Botswana,[50] all from wild collection. The German company Martin Bauer and its South African partners are managing a 10,000 ha project on collection of certified organic wild Devil's Claw[51]. Most of the exported Devil's claw was not certified.

Year	Organic (kg)	Sales Price USD/kg)	Non-Organic (kg)	Sales Price USD/kg
1999 (NAD / USD 1: 6)	10,210	3.7	604,355	2.3
2000 (NAD / USD 1: 6.7)	7,080	3.8	379,740	2.2
2001 (NAD / USD 1: 8.5)	3,810	2.9	726,333	2.0
2002 (NAD / USD 1: 11)	4,650	4.2	1,018,616	3.2
Total	**25,750**		**2,729,044**	

Table 24: Quantities (kg) and sales prices (USD) of organic and non-organic Devil's Claw produced in Namibia, 1999-2002.

Certification

There are two projects in Southern Africa that deal with certified organic wild collected Devil's Claw: one is the SHDC project in Namibia, which has an area of some 307,000 ha, and which is certified by the Soil Association (UK). The local population is integrated in the project and if needed, collectors will be trained in sustainable harvesting. Before the collecting season starts an ecologist inspects the stocks and gives harvesting quotas. Despite the relatively large collection area, the annual quantity exported is low. The second project is in South Africa, which seems to be the country with the largest area registered for collection of certified organic Devil's Claw. The tubers are collected on 1.9 million ha of land. However, the annual production is below 100 t and collection is declining because of declining demand[52]. The project is certified by Ecocert-Afrisco.

[49] von Willert (2003).
[50] Gruenwald (2003).
[51] WWF -Germany/TRAFFIC Europe-Germany (2001).
[52] Personal communication with Project Officer at Ecocert -Afrisco.

Markets

Germany is by far the most important market for Devil's Claw. Imports are estimated to be between 500 – 550 t per year in 2002 of which more than 80% originates in Namibia[53]. This would represent almost 50% of the world market. The most important buyers are Martin Bauer, Extract Chemie, Salus-Haus and Cornehls & Bosse, whose imports account for about 80% of the German market. Martin Bauer alone is reported to import at least 200 t per annum. This company also deals with organic Devil's Claw from South Africa. About 90% of all Devil's Claw imported originate from wild collection. The organic share is probably less than 10%. Other importing countries include France, the United Kingdom, Switzerland, the U.S. and some countries in the Far East[54].

Retail market prices in Europe are difficult to assess as most of the Devil's Claw is further processed into extracts in the pharmaceutical industry and sold in the form of capsules in pharmacies. Therefore the retail price per kg cannot be easily assessed. Only a small part is sold as powder or sliced. In Germany, wholesale prices for Devil's Claw slices or powder range from USD 4.75/kg (EUR 3.95) to USD 12.00/kg (EUR 10.00)[55]. No prices for organic material were found. At retail level Devil's Claw powder is mainly sold as a feed additive for horses and, to a lesser extend, dogs. Retail prices range from USD 15.50/kg (EUR 12.90) to USD 59/kg (EUR 49). The value chain of Devil's claw is shown in Figure 15:

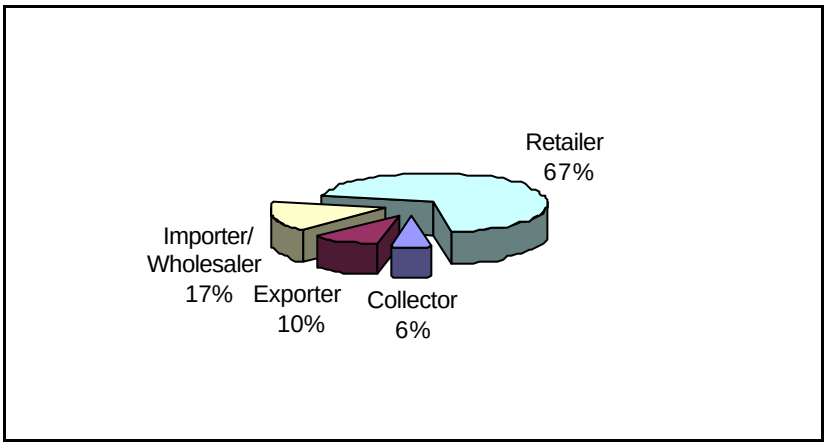


Figure 15: Supply chain operators' relative share of retail price of organic Devil's Claw, dased on average prices, 2005. Source: Based on Cole (2003) and authors' own investigation[56].

The certification of Devil's Claw is important for increasing the earnings of harvesters. For settlers without livestock, Devil's Claw collection is often the only source of cash income. Apart from the initial slicing and drying, no value-addition takes place in the countries of origin.

[53] Kathe et al (2003a).
[54] Cole (2003).
[55] Prices obtained in January 2006.
[56] It has to be noted that traders have to pay transport, processing, marketing expenses and taxes from their share.

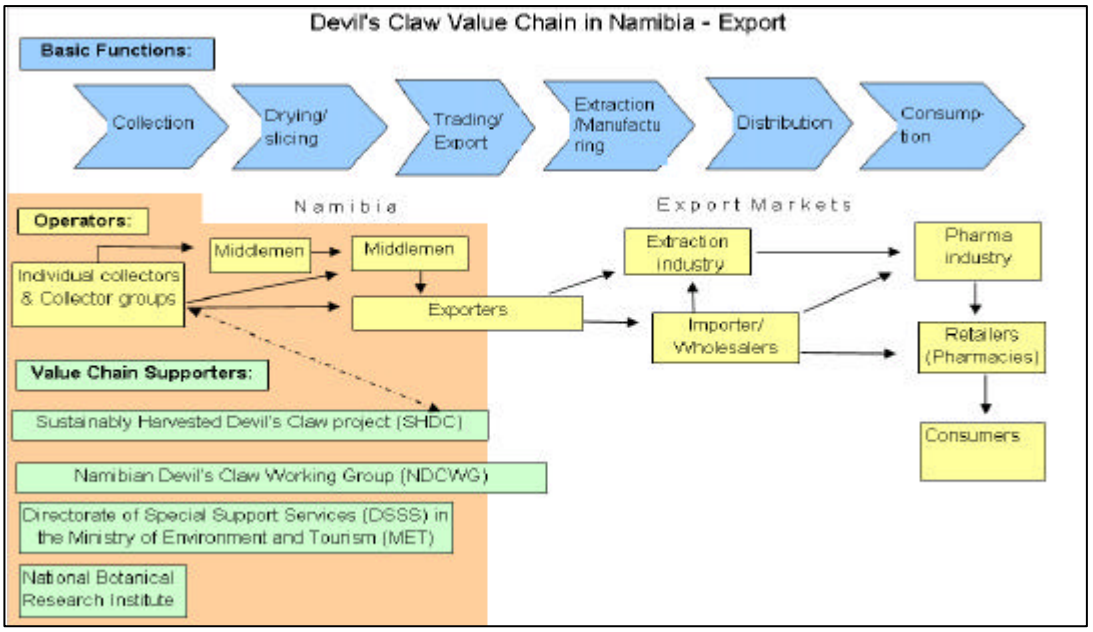


Figure 16: Value chain for export of Devil's Claw from Namibia.

Conservation aspects

The organisation of collectors as well as the market situation has a direct impact on the sustainability of the harvesting practices. In an attempt to increase incomes in the short term, collectors often harvest in an unsustainable way, for example through damaging or destroying the taproot when cutting off the tubers. Plants injured this way are unlikely to produce tubers in the future (GTZ (1999)). The rise in export during recent years led to concern among some importing countries regarding the sustainability of the trade. In 2000, the German government proposed listing of Devil's Claw in CITES Appendix II. However, the proposal was subsequently withdrawn, partly because this listing would have a negative effect on the livelihoods of thousands of Devil's Claw collectors[57]. Nevertheless, the proposal caused a decline in market demand, which is probably still felt in the market today. Another effect was renewed efforts for domestication and cultivation of Devil's Claw, especially in South Africa. Using modern agricultural techniques, commercial farmers would produce Devil's Claw at lower prices and in larger quantities. This would make wild collection uneconomic thus damaging the livelihood of collectors.

5.5.3 Collection of wild grown medicinal and aromatic plants in Bosnia and Herzegovina

Background

Bosnia and Herzegovina is extraordinarily rich in biological diversity. Traditionally, a large number of herbs, medicinal and aromatic plants (MAPs) are collected and used as herbal remedies, teas or personal careproducts. At least 160 – 170 MAP species are native to Bosnia and Herzegovina and most of these are still collected. For the rural population the collection of aromatic and medicinal plants is of great importance, as there are few alternatives for income generation.

[57] Raimundo et al (2005).

Figure 17: Wild herbs growing in central Bosnia and Herzegovina. Source:IMO Switzerland.

The war in the 1990's in Bosnia and Herzegovina had a devastating impact on the traditional collection of wild plants. The country's infrastructure was destroyed, experienced collectors were killed or had to emigrate, and part of the forest areas were heavily mined and are still inaccessible today. Additionally, because of lack of legislation or enforcement of legislation, there is a risk of over-exploitation by collectors and loss of habitats through illegal logging.

Today, part of the rural population depends on wild collection of aromatic and medicinal plants as a principal or supplementary source of income.
Based on cooperation between GTZ, IMO and SIPPO sustainable and organic wild collection projects in Bosnia and Herzegovina have been certified since 2001[58]. Since 2004, the projects have arranged for the financing of certification by themselves.

Case study: the wild crafting company "A"

"A" is a company that has organised local collectors from which they buy principally wild growing sage (*Salvia officinalis*), juniper (*Juniperus communis*) and everlast (*Helichrysum italicum*). The potential to increase earnings through increased level of processing encouraged its manager to start producing essential oils in 1999. The company initiated organic certification in 2001 and since then it works with organic products only. In 2005, the company is collecting wild growing medicinal and aromatic plants from seven collection areas. It produces essential oils and packs dried medicinal plants originating from wild collection. One person is responsible for the organisation of the collection, training of collectors, purchasing and processing.

Helichrysum italicum

Traditional usage: *helichrysum italicum* is a plant used against helminthiasis, cholelythiasis, cholecystitis and urinary system infections. In order to obtain most effect, it is recommended to use the flower when it is not completely developed. *Helichrysum* is also used as an ornamental flower and as a spice.

Processing: healthy yellow flower heads separated from the plant represent good raw material for the production of tea. Sometimes it is possible to use the herb as well.

[58] Another wild collection project, funded by SIDA, has been implemented by Grolink at almost the same time.

Distillation using water steam is practised in order to get quality essential oil (processing ratio: up to 0,12% of fresh weight material), which is known and required in the market. The essential oil is used in the pharmaceutical and cosmetic industries, for example as an ingredient in perfumes.

Markets: Europe (Germany, France, Belgium), Israel, USA, and others.

Harvested quantities per year: approximately 500 t fresh herb.

Annual production of essential oil: 500 kg.

Juniperus communis

Traditional usage: *Juniperus communis* represents the most popular and frequently used medicinal plant. It is used due to its diuretic properties, as well as for alleviation of symptoms related to common cold, cough asthma and gonorrhea. It is also used as an alcohol (*(Spiritus juniperi)* on skin superficies, or the berries are added to brandies, which are then used for body massage and against rheumatism and similar diseases.

Processing: clean and dry berries represent the raw material for the can industry, production of alcoholic beverages and juices *Succus Juniperi inspissatus* (Roob juniperi). Essential oil (processing ratio up to 2,5% of fresh weight material) obtained from mature and smashed berries is used in the meat industry and in the pharmaceutical industry. In the pharmaceutical industry it is used for the production inhalators, disinfectants, fumigants etc.

Market: Europe (Germany, France, England, Italy) and USA.

Harvested quantities: up to 1,000 t.

Salvia officinalis

Traditional usage: for a long period of time *salvia officinalis* has been known as a disinfectant, an anti-inflammatory drug and an antiperspirant. It is also known for being able to stop bleeding and alleviate pain. It is a tradition to prepare syrup of sage in the springtime. Diluted with water and used as a juice *Salvia officinalis* is highly appreciated and used against gastritis, proctitis, liver and gallbladder diseases, as well as a diuretic and expectorant. It is also believed to alleviate pain and symptoms of bronchitis and kidney diseases. Together with leaves of other plants, eaves of sage may be smoked against bronchial asthma. Dry green leaves are said to be useful for improving memory, reducing sweating during and retention of water. *Salvia officinalis* is used to treat throat and mouth inflammations, for example gingivitis, stomatitis and parotitis (mumps). It is advised to be taken as juice, tincture, extract or powder.

Processing: “American type” is the most common processing method. It involves both manual and machine cleaning of leaves from leaf stalks and other particles. *Salvia officinalis* is used in the food industry as a spice and as a preservative for meat products. Essential oil is obtained through distillation (processing ratio up to 2,5% of fresh weight material) and is used in for example aromatherapy, and in the cosmetic and pharmaceutical industries. Extracts are used in the food industry for the production of candies and alcoholic beverages, in the pharmaceutical industry to produce tooth paste and mouth water, and in the cosmetic industry to produce creams, bath lotions, etc.

Market: the most important market is the USA. Another market is Europe (e.g. Germany, France, Belgium, Spain and Italy).

Figure 18: Bags filled with dried herbs. Source: IMO, Switzerland.

Organisation of collection

All household members are involved in collection. As collection is seasonal work, which takes place during the vegetation period only, collection is often combined with other activities, such as herding or land cultivation. Apart from simple air-drying, there is no further processing carried out by the collectors.

Organisation of processing and export

The described company has achieved positioning its products on the European market for organic products. As MAPs are becoming increasingly interesting for European and US markets, the company has decided to have their products certified against both the EU and NOP regulations.

5.5.4 The market for certified organic seaweed in North-America

Background

For centuries seaweed has been used by coastal communities for different purposes, and provided employment for people in coastal areas. Traditionally seaweed has been used as soil fertilizer, feed and food (sea vegetables). Today a broad range of uses are seen, including liquid seaweed as a growth stimulant for plants in agriculture and horticulture, as biopolymers in the pharmaceutical, food and textile industries as well as in the personal care sector (including therapies like thalasso therapy).

The multiple uses of seaweed are due to different properties of seaweed products, principally the richness in minerals, trace elements and vitamins, but also the thickening or gelling properties. Known as Agar Agar, it is a permitted processing aid in organic food processing. In Asia, the use of seaweed as food (or sea vegetables) is much more common than the use as a processing aid. In Europe and United States sea weed is known through the Japanese cuisine (e.g. brown sea algae Wakame or red sea algae Nori). Seaweed is collected in the wild as well as cultivated.

The critical issue for seaweed collection is the water quality. As a consequence seaweed collection takes place in countries like Iceland, Ireland, Norway, Canada and in other areas with little industry and little shipping traffic. Some organic certification bodies, e.g. OCIA, have set up specific standards for seaweed collection.

Figure 19: Ascophyllum nodosum harvest on Iceland. Source: Thorvin Inc.

Market in North America

Most of the certified organic seaweed is produced in Canada except the fresh water algae in Lake Klamanth (*Aphanizomenon flos aquae* or AFA-Algae), which is produced in Ontario (United States). The commercially interesting seaweed species are bladdenwrack (*Fucus vesiculosus*), dulse (*Palmaria palmata*) and kelp (*Laminaria digitata*). The total organic wild harvested quantity is estimated at about 100 t (2005)[59]. A significant larger amount of organic seaweed is exported by Iceland (kelp and knotted wrack (*Ascopyhllum nodosum)*) and China (green laver (*Ulva lactuca)*). The import quantities are estimated at about 550 t (2005)[60]. The most important market segments for seaweed in North America are animal feed, food supplements and farm inputs, counting for more than 80% of total consumption (Figure 20).

A minor part of the production is exported to Asia, mainly Taiwan, and to European countries (mainly Germany). The total value of certified organic seaweed in the North-American market is estimated to have reached approximately EUR 1.3 millions in 2005[61].

[59] The estimation is done by Bill Wolf of Wolf & Associates, based on interviews with traders and other market players.
[60] This estimation excludes Green laver (*Ulva lactuca*) as no import quantities from China have been available. However, the certified quantity of *Ulva lactuca* in China has been reported at 5,450 t.
[61] The estimation is done by Bill Wolf of Wolf & Associates, based on interviews with traders and other market players.

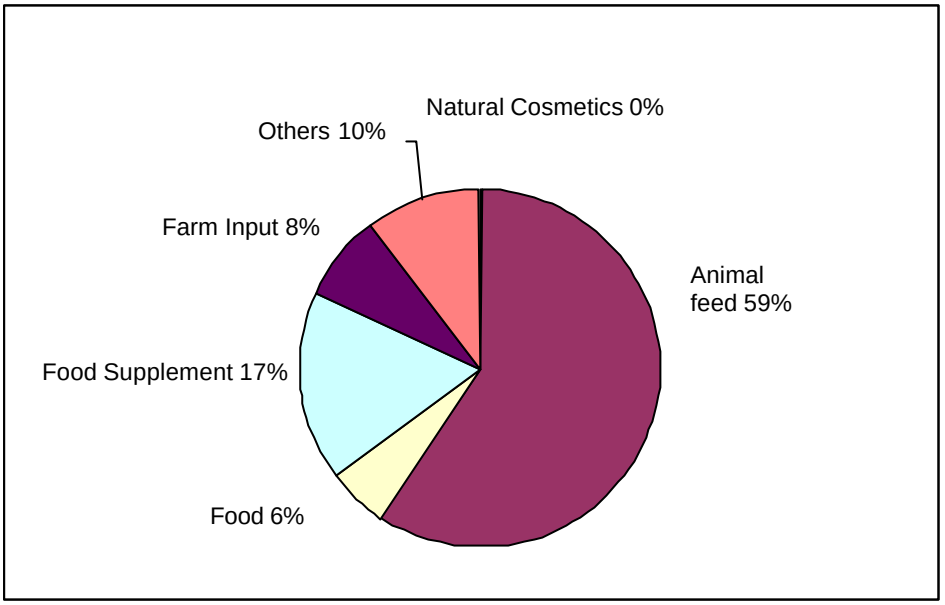


Figure 20: Relative size of organic seaweed market segments in USA and Canada, 2005.

Acronyms and abbreviations

ACB	Accredited Certification Bodies
AIRS	Agricultural Institute of the Republic of Srpska,
BCS	BCS Öko-Garantie
BDIH	*Bundesverband deutscher Industrie- und Handelsunternehmen für Arzneimittel, Reformwaren, Nahrungsergänzungsmittel und Körperpflegemittel e.V.* / Federation of German Industries and Trading Firms for pharmaceuticals, health care, dietary supplements and personal hygiene products.
BfN	*Bundesamt für Naturschutz* / German Federal Agency for Nature Conservation
CBs	Certification bodies
CITES	The Convention on International Trade in Endangered Species of Wild Fauna and Flora
EUR	Euro
FLO	Fairtrade Labelling Organizations International
FSC	Forest Stewardship Council
FVO	Farm Verified Organic
GACP	Good Agricultural and Collection Practice
GTZ	*Die Deutsche Gesellschaft für Technische Zusammenarbeit* / The German Technical Cooperation Agency
IBS	IFOAM Basic Standards
ICCOA	International Competence Center for Organic Agriculture
ICS	International Certification Services, Inc.
IFOAM	International Federation of Organic Agriculture Movements
IMO	Institute for Marketecology
ISSC-MAP	International Standard for Sustainable Wild Collection of Medicinal and Aromatic Plants
ITC	International Trade Centre (UNCTAD/WTO)
IUCN	International Union for Conservation of Nature and Natural Resources
JAS	Japanese Agricultural Standard
JONA	Japan Organic & Natural Foods Association
MAPs	Medicinal and Aromatic Plants
MPSG	Medicinal Plant Specialist Group
NAD	Namibia Dollar

NASAA	The National Association for Sustainable Agriculture, Australia
NOP	National Organic Program
NTFPs	Non-Timber Forest Products
NWFPs	Non-Wood Forest Products
OCIA	Organic Crop Improvement Association
SHDC	Sustainably Harvested Devil's Claw
SIPPO	Swiss Import Promotion Programme
t	Metric ton
TRAFFIC	Trade Records Analysis of Flora and Fauna in Commerce
UCFA	*Union des Coopératives des Femmes de l'Arganeraie* / Union of Women's Cooperatives of the Arganeraie
UK	United Kingdom
US	The United States of America
USD	United States Dollar
USDA	United States Department of Agriculture
WHO	World Health Organization
WWF	World Wide Fund for Nature
ZAR	South African Rand

Latin words

Cortex	Bark
Flos	Flowers
Folia	Leaves
Fructus	Fruit
Herba	Herb
Radix	Root
Semen	Seeds
Succus	Juice

Annex 1
Comparison of Governmental and Inter-governmental Organic Standards

Governmental and Inter-governmental Standards									
Standards	**Reference, heading or introduction to the relevant section dealing with wild collected products**	**Definition (in the definition section)**	**Collection area / land tenure**	**Targeted product**	**Other products growing in the area**	**External influence on the respective area (history)**	**Contamination risk / buffer zones**	**Responsibility**	**Additional requirements**
Codex Alimentarius Commission Guidelines for the production, processing labelling and marketing of organically produced foods	Annex 1 A, 9 " The collection of edible plants and parts thereof, growing naturally in natural areas, forests and agricultural areas, is considered an organic production method provided that: […]"		Annex 1.A, 9 "[…] the products are from a clearly defined collection area that is subject to the inspection/certification measures set out in Section 6 of these guidelines[…]"	Annex 1.A, 9 "[…] the collection does not disturb the stability of the natural habitat or the maintenance of the species in the collection area […]"		Annex 1.A, 9 "[…] those areas have received no treatments with products other than those referred to in annex 2 for a period of three years before the collection […]"		Annex 1.A, 9 "[…] the products are from an operator managing the harvesting or gathering of the products, who is clearly identified and familiar with the collection area […]"	
The EU regulation on organic production of agricultural products and indications referring thereto on agricultural products and foodstuffs	Annex 1 A, 4 "The collection of edible plants and parts thereof, growing naturally in natural areas, forests and agricultural areas, is considered an organic production method provided that: […]"		Annex III A.1.1 "The full description of the unit ….. must be drawn up even where the producer limits his activity to the collection of wild plants"	Annex 1.A, 4, "[…] the collection does not affect the stability of the natural habitat or the maintenance of the species in the collection area."	Annex 1.A, 4, "[…] the collection does not affect the stability of the natural habitat or the maintenance of the species in the collection area"	Annex 1.A, 4, "[…] those areas have received no treatments with products other than those referred to in Annex II for a period of three years before the collection […]."			

Annex 2
Comparison of Private Organic Standards

Standards	Reference, heading or introduction to the relevant section dealing with wild collected products	Definition (in the definition section)	Collection area / land tenure	Targeted product	Other products growing in the area	External influence on the respective area (history)	Contamination risk / buffer zones	Responsibility	Additional requirements
IFOAM Basic Standards[62]	Section 2.4 "Wild Harvested Products and Common/Public Land Management"		Section 2.4.1 "Wild harvested products shall only be certified organic if they are derived from a stable and sustainable growing environment." Section 2.4.2 "Operators shall harvest products only from a clearly defined area…"	Section 2.4.1 "The people who harvest, gather, or wildcraft shall not take any products at a rate that exceeds the sustainable yield of the ecosystem, …" […]"	Section 2.4.1 "The people who harvest, gather, or wildcraft shall not take any products at a rate that exceeds the sustainable yield of the ecosystem, or threaten the existence of plant, fungal or animal species, including those not directly exploited."	Section 2.4.2 "Operators shall harvest products only from a clearly defined area where prohibited substances have not been applied."	Section 2.4.3 "The collection or harvest area shall be at an appropriate distance from conventional farming, pollution and contamination.	Section 2.4.4 "The operator who manages the harvesting or gathering of common resource products shall be familiar with the defined collecting or harvesting area."	Section 2.4.5 Operators shall take measures to ensure that wild, sedentary aquatic species are collected only from areas where the water is not contaminated by substances prohibited in these standards.

[62] It should be noted that the IBS is a standard for standards, not for certification.

Standards for KRAV certified production							Section 8.1.5 " Areas shall be situated such that contamination does not reduce the value of the products as food for human consumption or animal feed." Section 8.1.6 " A 25 metre wide buffer zone shall be provided beside roads with traffic intensity above over 3000 vehicles per day on a yearly average, or other sources of contamination …"	Section 8.1.9 "Persons who gather or pick shall have access to maps of KRAV approved areas so that all gathering and picking is confined to these areas. All information, including instructions and standards, shall be available in the appropriate language of the parties at the point of purchase."	
NASAA Organic Standard							Section 5.3.7 "The Wild Harvest area must not be grazed by conventional stock unless they conform to the requirements of quarantine, and are managed in accordance with this Standard."		Section 5.3.2 "Where an area designated for wild harvest is subject to harvest by other operators, those operators practices must not fail to satisfy the same requirements for sustainability and regeneration of the resources base."

Standards	Reference, Heading or introduction to the relevant section dealing with wild collected products	Definition (in the definition section)	Collection area / land tenure	Targeted product	Other products growing in the area	External influence on the respective area (history)	Contamination risk / buffer zones	Responsibility	Additional requirements
Naturland Standards on Production		Part B, IX, 1 “”Wild grown products" are defined as products that have grown without or with low influence of the operator gathering the products. The harvest has to be planned and carried out applying a sustainable system that is ecofriendly and socially acceptable.”	Part B, IX, 2, 2.4 “The production method (collection and any treatment measures) must show proof of their ecofriendly nature, whereby damage to the ecological system from long-term exploitation has to be excluded. “				Part B, IX, 2, 2.1 “The possibility of contamination of the products in the collecting areas by pollution from other areas has to be excluded.”	Part B, IX, 2, 2.3 “ The collecting rights have to be identified clearly within the project. One or more persons have to be named as responsible for the following range of duties:... “	Part B, IX, 2, 2.5 “Before the start of each collecting season, the maximum amount to be harvested has to be defined annually to prevent overexploitation.” Part B, IX, 2, 2.7 “Regular residue analysis is obligatory. A list of substances to be looked for as well as their relative limits will be given for each product.”

Annex 3 Comparison of Non-Organic Standards on Wild Collection

Standards	Reference, Heading or introduction to the relevant section dealing with wild collected products	Definition (in the definition section)	Collection area / land tenure	Targeted product	Other products growing in the area	External influence on the respective area (history)	Contamination risk / buffer zones	Responsibility	Additional requirements
ISSC-MAP, working draft 3. 1 February 2006	ISSC-MAP is a standard "for Sustainable Collection of Medicinal and Aromatic Plants."		"Principle 1: Wild collection of MAPs shall be conducted at a scale and rate and in a manner that maintains populations and species over the long term; 1.3 the volume and rate of MAP collection do not exceed the target species' ability to regenerate over the long term."	"1.2. standard proposes different management approaches for populations likely to be more vulnerable compared to others which are more resilience."	"Principle 2 Environmental Impact and Conservation Measures: 2.1 minimize negative impacts on the collection area and on neighbouring areas; 2.2 protect threatened and endangered species that are likely to be affected; 2.3 do not favour MAPs with practices that further endanger rare or threatened species or habitats; 2.4 Enrichment planting does not adversely impact ecosystem diversity."	not covered	not covered	"Principle 3: Sustainable MAP collection and management shall be carried out under legitimate tenure arrangements, in compliance with relevant laws; Principle 5 Management practices: Participatory approach requiring participation of collectors and local communities in MAP resource management."	"Principle 6: market requirements: Financial Sustainability, traceability, Quality Specifications. Principle 7: Buyer-Collector Relations including training and capacity building, workers safety and compensation."
Additional remarks on ISSC-MAP	Compared to organic wild collection standards the ISSC-MAP draft concretizes applicable criteria to monitor the principles. Good collection practices are required which are supported by adequate resource assessment and monitoring of collection impacts (1.1). It is required that assessment and monitoring is performed and documented (5.4). Compliance with legal and ethical requirements is also included (rights of local and indigenous people with customary rights). There is also a special focus on the protection of other species or habitats likely to be affected by MAP collection.								

Standards	Reference, Heading or introduction to the relevant section dealing with wild collected products	Definition (in the definition section)	Collection area / land tenure	Targeted product	Other products growing in the area	External influence on the respective area (history)	Contamination risk / buffer zones	Responsibility	Additional requirements
WHO guidelines on GACP	"Glossary and section 3: Good collection practices for medicinal plants"	Definition of sustainable use can be found in the glossary: "The use of components of biological diversity in a way and at a rate that does not lead to the long term decline of biological diversity, thereby maintaining its potential to meet the needs and aspirations of present and future generations."	"3.1 permission to collect: obtain collection permits and in case of exporting the products export permits. 3.2 Technical planning: identification of the collection sites; geographical distribution and density of the targeted medicinal plant species should be determined. Develop a "search image" for the targeted species collection team familiar with good collecting techniques, responsibilities based on written documents, social impact on local communities shall be examined."	"3.3 unmistakable identification of the collected plant: (botanical variety). 3.4 collection shall ensure long-term survival of wild populations and their associated habitats; Management plans refer to the species and the plant parts (roots, leaves, fruits) to be collected, specify collection levels and practices. Appropriate collecting season determined according to quality and quantity of biologically active constituents."	"3.4 collection shall ensure long-term survival of wild populations and their associated habitats."	"3.4 no collection in or near areas where high levels of pesticides or other possible contaminants are used or found such as roadsides, drainage ditches … industrial facilities. History of the area not addressed."	Not addressed	"3.5 Personnel: Local experts responsible should have formal or informal practical education in plant sciences and have practical experience. They are responsible for training and supervision of collectors."	"3.4 after collection the raw medicinal plant material may be subject to appropriate preliminary processing […]"
Additional remarks on WHO Guidelines on GACP	Document is much more descriptive compared to other documents. It outlines in detail the practices operators should implement in case of being involved in wild collection and covers practices relevant after the harvest. There is specific focus ensuring that the targeted plant can be identified clearly and that there is a description of the botanical variety. Compared to organic standards there is greater emphasis on training and level of knowledge of the personnel involved. Contains a reference to national red lists as well as the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES).								

Standards	Reference, Heading or introduction to the relevant section dealing with wild collected products	Definition (in the definition section)	Collection area / land tenure	Targeted product	Other products growing in the area	External influence on the respective area (history)	Contamination risk / buffer zones	Responsibility	Additional requirements
Guidance for FSC accredited certification bodies in the assessment of NTFP (draft)	Guidelines aim to complement the FSC principles and Criteria with respect to non-timer forest products (NTFPs). The goal is to enable certification bodies to undertake consistent evaluations of NTFP harvesting operations.	"Non-timber forest products: All forest products except timber including other material obtained from trees such as resins and leaves, as well as any other plant and animal products. (FSC Principles and Criteria. Document 1.2 revised Feb. 2000)."	"Principle 2 Tenure and use rights and responsibilities. Controlled access to the NTFP resource shall be shown (either property title, or lease, access permit). Clearly defined boundaries, Principle 7: Management Plan. Documented land management practices for the NTFP harvesting including the assessment of maximum sustainable harvest levels and specific guidelines for the harvest of each NTFP species or sub-group. "	"Principle 5: benefits from the forest; extractive removal or destructive harvesting. In case of destructive harvesting it shall be demonstrated through existing research that harvesting techniques and rates shall not cause long term threat to the species. Where long term harm cannot be avoided the harvester is responsible for renewal."	Principle 6 Environmental impact. Impact on other animal or plant communities is minimized. Negative impacts on the NTFP resource from timber harvesting and likewise impacts on the timber resource of NTFP harvesting.	History not covered. Connection between forest management and harvest of NTFP covered.			"Principle 3 Indigenous Peoples' rights; Investigation whether the harvest concerns a species of particular or religious significance. Steps have been put in place to resolve conflicts. Local communities shall receive fair benefit for any use of their name or image in marketing; Principle 4: Community relations and worker's rights; harvest shall not negatively impact subsistence utilization."
Additional remarks on FSC guidance	Particular focus on monitoring measures: Principle 8: Monitoring and assessment requires a monitoring system to be in place that ensures that the maximum sustainable harvest levels and practices are respected. "Where necessary the security of the management area shall also be monitored to ensure its integrity."								

Annex 4
Questionnaire Certification bodies

1 General information

***Name of your organic certification body*:**

***E-Mail address*:**

***Country of your principal office*:**

***Accredited according to*:**
- ❑ IFOAM
- ❑ USDA
- ❑ JAS
- ❑ EN 45011 or ISO 65
- ❑ National Regulation

Do you certify organic wild products?
- ❑ No ->
- ❑ Yes

2 Detailed information about organic wild collection

Please, submit for every wild collection operator and/or project one separate questionnaire!

Country:

Total Certified Collection Area 2005 (in ha): ***ha***

Which wild products are collected and certified in the collection area (2005)?*
In case you certify more than 10 products within the same project or for the same operator, please, use an additional questionnaire.

	Botanical Name (if available, if not trade name)	Maximum harvest Capacity 2005 (t)**	F.O.B. price (US-$/kg)***
Product 1			
Product …			

* Please, select only organic wild products which are collected, certified and sold. In case more than one part of a plant is collected (e.g. leaves and roots), please, treat the collected parts as separate products. ** Many certifiers estimate the maximum harvest capacity of a specific wild product in the collection area. *** If available, if not, don't care.

Certified, collected and sold quantity as well as collection area per product:

	2003		2004		2005	
	Area (ha)	Quantity (t)	Area (ha)	Quantity (t)	Area (ha)	Quantity (t)
Product 1*						
Product …						

*** Please, use the same chronology as in the first table!**

Organic certification standard and country of destination:

	Organic certification standard					Total Quantity of wild products imported to European Union in 2004 (Import Certificates)*
	EU	JAS	NOP	National Organic Regulation	Private Organic Standard (please,specify)	
Product 1*	❑	❑	❑	❑	❑	
Product …	❑	❑	❑	❑	❑	

Please, use the same chronology as in the previous tables!
*** Only applicable for Importations from Third Countries to the European Union!**

Who is the holder of the organic certificate?

❑ Collector group
❑ Wholesaler
❑ Manufacturer/
❑ Exporting company
❑ Importing company

How many collectors are registered?

Is the operator/ wild collection project certified by more than one organic certification body?

❑ Yes ❑ No
In case yes, please, specify who else certifies in the country of origin:

3 General aspects in the wild collection project

Please, assess the efficiency of your monitoring tools to assess sustainability in the specific wild collection project:

Low					High
1	2	3	4	5	6
❑	❑	❑	❑	❑	❑

Who collects?

❑ Male collectors
❑ Female collectors
❑ Children

Are collectors employed or self-employed?

❑ Employed
❑ Self-employed

Are there others than the registered collectors of the organic wild collection project collecting in the same area?

❑ Yes
❑ No
❑ Unknown

Which processing steps are carried out by collectors? *(multiple ticking possible)*

❑ Storage
❑ Initial drying
❑ Other processing steps

Please specify:

Final export product *(multiple ticking possible)*

❑ Raw material
❑ Semi- processed
❑ Finished product

Annex 5
Questionnaire Companies

1 General Information

Please, indicate the country where the principal office of your company is located?

E-mail address:

Please, indicate the section you belong to *(multiple ticking possible)*

- ❑ Importer
- ❑ Exporter
- ❑ Manufacturer
- ❑ Wholesaler
- ❑ Retailer
- ❑ Private Label
- ❑ Others
  -> Please, specify:

Do you import, distribute, process and/or market certified organic wild products?

- ❑ Yes
- ❑ No, up to now we haven't dealt with organic wild products
- ❑ No, but we are planning to start dealing with certified organic wild products
- ❑ No, this subject is not of interest for us

-> In this case answering of further questions is not necessary -> please send the questionnaire via Fax to 0049 89 820 759 19 or send us a brief notice by email to a.nowack@organic-services.com
Thank you very much!

In which market segments are you engaged with certified organic wild products?

- ❑ Food
- ❑ Food Supplements
- ❑ Natural Remedies
- ❑ Body Care & Cosmetics
- ❑ Fibres/Textiles
- ❑ Industrial Uses
  Please, specify:
- ❑ Others
  Please, specify:

Do you have own organic wild collection projects?

- ❑ Yes
- ❑ No
- ❑ No, but we are planning to develop own certified organic wild products

If yes, which ones?

Organic Wild Product	Area certified (ha)	Number of collectors involved

How do you assess the importance of the following criteria when taking the buying decision for wild organic products?

(scale 1-5; 1=very important; 5=not important)

	1	2	3	4	5
Social impact in the wild collection projects	❑	❑	❑	❑	❑
Sustainability of the collection	❑	❑	❑	❑	❑
Price	❑	❑	❑	❑	❑
Product Quality	❑	❑	❑	❑	❑
Product also available from organic farming	❑	❑	❑	❑	❑
Product traceable to the origin	❑	❑	❑	❑	❑

2 Organic Wild Product Specific Questions

Organic Wild Product *(please, indicate trade name):*

Wild Product (raw, semi-processed etc.)		**Country of Origin:**	

What is the average organic premium for this wild product in %?

	2003	2004	2005
Quantity of wild product (tons/year)			
Value (US-$)			
Organic share of total quantity (organic and non-organic) of this product %			

To which organic standard(s) the wild product(s) has (have) been certified?

EEC 2092/91	NOP	JAS	Other National Organic Regulation	Private Organic Standard
❑	❑	❑	❑	❑

In case of private organic standard(s), please, specify:

To which "conventional" standard(s) the organic wild product(s) has (have) been certified?

GAP	GMP	Others	If others, please, specify:
❑	❑	❑	

To which other "alternative" standard(s) the organic wild product(s) has (have) been certified?

FSC	Fairtrade	Others	If others, please, specify:
❑	❑	❑	

For which market segment are you using the organic wild product?

Food	Food Supplement	Body Care/ Cosmetics	Remedies	Fibres/ Textiles	Industrial Uses	Others
❑	❑	❑	❑	❑	❑	❑

In case of others, please, specify:

Various questions related to Organic Wild Product ?	Yes	No
Organic Wild Product used for multi-ingredient products?	❑	❑
Final product indicates wild origin (ingredients list, product labelling)	❑	❑
National Sales (raw materials, semi-processed, finished products) only	❑	❑

In case of exports, please, indicate the countries of destination:

Annex 6
Reported organic wild collected products. Collection area[63] (ha) and harvested quantities[64] (t) for each product. 2005

Sorted alphabetically by scientific name

	Product		Area (ha)	Quantity (t)
Ranking	Scientific name	Common name		
1	*Abies alba, folia*	Silver fir	56,096	300
2	*Abies grandis*	Grand fir	0	0
3		Acacia honey	0	180
4	*Acacia senegal*	Gum arabica	0	400
5	*Acer saccharum*	Maple syrup	0	0
6	*Achillea millefolium*	Yarrow	1,920,873	72
7	*Achillea millefolium, flores*	Yarrow, flowers	13,240	2
8	*Aconitum*	Iron hut	48,006	0
9	*Aconitum, radix*	Aconite, root	1,650,000	1
10	*Acorus calamus*	Calamus	56,706	1
11	*Actinidia chinensis, fructus*	Chinese gooseberry	22,000	1
12	*Adansonia digitata and Sclerocarya birrea; Triquila unknown*	Baobab, marula and triquila oil	0	2
13	*Adatoda vasika*	Bansa	2,023	0
14	*Adonis vernalis, herba*	Spring pheasant´s eye	1,650,000	5
15	*Aegle marmelos*	Bengal quince	2,023	0
16	*Aesculus hippocastanum*	Bitter chestnut	167	10
17	*Agaricus hortensis*	White mushroom	0	4,800
18	*Agathosma betulina*	Buchu	0	1
19	*Agrimonia eupatoria*	Agrimony	11,700	4
20	*Agropyron repens, radix*	Couch grass	19,600	4
21	*Alchemilla vulgaris*	Lady´s mantle	8,700	1
22	*Allium ursinum*	Bear´s garlic	1,876,177	673
23	*Althaea off.*	Marsh mallow	38,700	9
24	*Althea officinalis, radix*	Marsh mallow, root	530	6
25	*Amanita caesarea*	Caesars mushroom	730	0
26	*Amaranthus blitus*	Strawberry blite	7	0

[63] The sum of registered areas for all products exceeds the total registered collection area shown in Appendix III because several products may be collected from same registered area.

[64] 0 indicates that data is not available.

27	*Ananas comosus*	Pineapple	20	0
28	*Anethum graveolens*	Dill	100	1
29	*Angelica archangelica*	Angelica	0	0
30	*Angelica sinensis*	Dang gui	0	0
31	*Anthyllidis vulneraria, flos*	Common kidneyvetch	1,650,000	1
32	*Aphanizomenon Flos Aquae*	Blue green algae	2,024	45
33	*Arachis hypogaea*	Wild peanuts	0	0
34	*Aralia elata*	Japanese angelica tree	36,333	246
35	*Arbustus unedo*	Strawberry tree	0	0
36	*Arctium lappa, radix*	Major burdock, root	20,130	3
37	*Arctostaphyllos uva-ursi, folia*	Bearberry, leaves	11,100	3
38	*Argania spinosa, fructus*	Argan nut	2,000	25
39	*Armillaria mellea*	Honey mushroom	1,458,067	554
40	*Arnica montana*	Arnica	1,663,500	83
41	*Aronia melanocarpa*	Black-berried aronia	9,627,500	121
42	*Artemisia absinthium*	Wermouth	18,700	8
43	*Artemisia annua*	Sweet sagewort	1,000	0
44	*Artemisia argyui, folia*	Argy wormwood leaf	20,000	1
45	*Artemisia dracunculus*	Tarragon	50	2
46	*Artemisia integrifolia (leaf bud)*	Common wormwood	75,000	100
47	*Artemisia spp.*		48,006	0
48	*Asarum europaeum, folia*	European snake-root	1,650,000	2
49	*Ascophyllum nodosum*	Knotted sea-wrack	0	0
50	*Aspalathus linearis*	Rooibush	0	100
51	*Asparagus off.*	Asparagus	108,053	502
52	*Asparagus racimosus*	Satavari	2,023	0
53	*Astragalus sinicus, flos*	Chinese melkvetch, flos	20,000	1
54	*Astragalus sinicus, radix*	Milkvetch root,	50,000	11
55	*Atractylodes*	Baishu largehead rhizomes	30,000	50
56	*Auricularia auricula*	Black fungi	1,477,941	499
57	*Azadirachta indica*	Neem tree	72	46
58	*Bacopa monnerie*	Brahmi	2,023	0
59	*Bambusum vulgaris*	Bamboo shoots	507,076	70,873
60		Bee pollen	0	30
61		Bee wax	0	0
62	*Benincasa hispida, semen*	Wax gourd, seed	20,000	1
63	*Bertholletia excelsa*	Brazil nut	1,234,528	16,073
64	*Betula pendula, cortex*	Birch bark	530	2

65	*Betula pendula, leaves*	Birch	1,668,700	9
66	*Betula pubescens*	Birch	0	0
67	*Bidens tripartita, herba*	Treelobe beggarticks	530	2
68	*Boerhaavia diffusa*	Purnava	2,023	0
69	*Boletus aurantiatum*	Bolete	420,000	1
70	*Boletus edulis*	King bolete	1,160,456	1,998
71	*Boswellia thurifera*	Frankincense	0	0
72	*Brassica napus*	Rapeseed oil	0	15
73	*Brosimum allicastrum*	Ramon nut	83,500	0
74	*Butyrrospermum parkii, fructus*	Shea butter	646,000	2,530
75	*Calendula off.*	Marigold	3	0
76	*Calluna vulgaris*	Common ling	0	0
77	*Camellia cordifolia*	Camellia cordifolia	10,495	2,758
78	*Camellia sasanqua, semen*	Camellia sasanqua, camellia seed, semen	20,000	80
79	*Camellia sinensis, flos*	Tea flowers	1,959	810
80	*Camellia sinensis, folia*	Tea leaves	962	59
81	*Camellia sinensis, semen*	Tea seed for oil	16,755	6,162
82	*Cantharellus cibarius*	Yellow chanterelle/ egg mushroom	1,473,658	448
83	*Caparius spinosa*	Caper	245	0
84	*Capsella bursa-pastoris*	Shepherd´s purse	18,702	5
85	*Cassia tora, Seeds*	Sicklepod	20,000	3
86	*Castanea hippocastaneum*	Horse chestnut	9,207,500	11
87	*Castanea mollissima*	Chinese chestnut	1,077	700
88	*Castanea vesca syn. Sativa*	Edible chestnut	10,420	30
89	*Catathelasma ventricasum*	Catathelasma ventricasum fungus	418,600	10
90	*Cedrus atlantica*	Cedar wood Atlas	0	0
91	*Centaurea cyanus*	Cornflower	20,000	2
92	*Centaurium erythraea*	Common centaury	18,780	21
93	*Centella asiatica*	Gotu kola	2,023	0
94	*Ceratonia siliqua*	Carob	0	104
95	*Certraria islandica*	Iceland moss	1,650,000	2
96	*Chimonanthus praecox, folia*	Wintersweet	20,000	5
97	*Chrysanthemum morifolium flos*	Indian dendranthema flower	20,000	2
98	*Cichorium intybus, radix*	Chicory root	29,600	7
99	*Cinnamomum cassia, cortex*	Cassia bark, cortex	20,000	2
100	*Cinnamomum glaucescens*	Sugandha kokila	48,006	0
101	*Cinnamomum tamala*	Tamala	48,006	0
102	*Cinnamomum zeylanicum*	Cinnamon	2,023	0

103	*Cistus ladaniferus*	Cistus	126,120	95
104	*Citrus clementine*	Clementine Petitgrain Leaf	0	0
105	*Citrus reticulata*	Orange peel	20,000	1
106	*Clavaria spp.*	Coral mushrooms	418,600	6
107	*Cocos nucifera*	Coconut	1,937	5,175
108	*Coffea arabica L.*	Coffee beans	39	69
109	*Colocarpum zapota*	Mamey/ zapote	14	7
110	*Condonopsis, radix*	Danghsen condonopsis roots	30,000	5
111	*Cordyceps sinensis*	Caterpillar fungus	2,000	0
112	*Cornus mas*	Cornelian cherry	9,384,800	210
113	*Corylus avellana, folia*	Hazel nut, leaves	1,650,000	6
114	*Corylus avellana, fructus*	Hazel nut	10,521	30
115	*Corylus heterophylla, fructus*	Siberian hazelnut	75,000	500
116	*Crataegus monogyna*	Hawthorn	11,216,648	348
117	*Crataegus monogyna cum folia*	Hawthorn, fruit and leaves	273,025	61
118	*Crataegus monogyna, folia*	Hawthorn, leaves	1,660,000	6
119	*Crataegus oxycantha*	Red hawthorn	111,261	23
120	*Crataegus pinnatifida, fructus*	Hawthorn fruit	20,000	2
121	*Crataegus spp*	Hawthorn	3,000	1
122	*Cratarellus cornucopioides*	Black chanterelle	7,725	31
123	*Crithmum maritimum*	Sea fennel	0	0
124	*Crocus sativus*	Saffron, quality "coupe"	5	1
125	*Cucurbita spp., semen*	Cu shaw seed	20,000	1
126	*Cuminum cyminum*	Cumin	180	50
127	*Cyclopia spp.*	Honeybush	0	150
128	*Cymbopogon citratus*	Lemon grass	2,023	0
129	*Cymbopogon martinii*	Palmarosa oil	0	0
130	*Cymbopogon spp.*	Lemon grass etc.	32	80
131	*Cynomorium songaricum*	Suo Yang/ fleshy stem	6,667	10
132	*Cyprus rotundus*	Nut grass	2,023	0
133		Various berries	5	0
134		Various fruits, names not clarified	0	0
135		Various. herbs, names not clarified	558,025	4
136		Various MAP species	0	535
137		Various mushrooms, names not clarified	8,907,662	3,771
138		Diff. nut kernels	0	40
139		Diff. species, name not clarified	58,000	112
140		Wild bitter tea, tianshan lushui	333	10

141	*Dioscorea villosa*	Wild yam	0	0
142	*Drynaria fortunei, radix*	Fortune´s drynaria rhizome	20,000	5
143	*Drypteris filix-mas, radix*	Male fern	1,650,000	5
144	*Eletteria cardamomum*	Cardamom	80	2
145	*Eleuterococcus senticosus*	Siberian ginseng	40,400	142
146	*Embelia ribes*	False pepper	2,023	0
147	*Emblica off.*	Amla	50,029	0
148	*Empetrum nigrum*	Black crowberry	0	0
149	*Ephedra sinensis*	Chinese ephedra	6,667	10
150	*Epilobium angustifolium*	Flowering willow	0	0
151	*Epilobium parviflorum*	Hairy willowherb	8,700	2
152	*Equisetum arvense*	Field horsetail	1,711,380	26
153	*Eriobotrya japonica, folia*	Loquat leaf	20,000	2
154	*Eucalyptus camaludensis*	White box	0	0
155	*Eucalyptus globulus*	Eucalyptus oil	45	100
156	*Eucalyptus radiata*	Narrow-leaved peppermint	0	0
157	*Euphrasia officinalis, herba*	Eyebright, herb	216,043	13
158	*Euryale ferox, semen*	Gordon euryale	1,867	10
159	*Euterpe oleracea*	Palm hearts	1,682	1,365
160	*Fagus spp., fructus*	Beech nut	9,207,500	20
161	*Fibularhizoctonia*	Termite mushroom	46,200	34
162	*Filipendula ulmaria, flos*	Meadowsweet	1,650,000	1
163	*Fistulina hepatica*	Ox liver mushroom	3,780,000	429
164	*Foeniculum vulgare, fructus*	Fennel seeds	350	123
165	*Fragaria vesca, folia*	Wild strawberry, leaves	19,600	5
166	*Fragaria vesca, fructus*	Wild strawberry	145,187	480
167	*Fraxinus exselsior*	Ash	1,660,000	12
168	*Fritillaria cirrhosadon, fructus*	Fritillaria cirrhosadon	8,000	50
169	*Fumaria off.*	Common furmatory	80	0
170	*Galium aperine*	Cleavers	0	2
171	*Galium verum*	Yellow bedstraw/ cleaver	0	0
172	*Gallium ordoratum*	Sweet woodruff	5	0
173		Game, no specification	0	0
174	*Ganoderma lucidum*	Reishi mushroom powder	0	0
175	*Garcinia combogia*	Garcinia	2,023	0
176	*Garcinia indica*	Garcinia	2,023	0
177	*Gardenia jasminoides, fructus*	Cape jasmine fruit	20,000	1
178	*Gaultheria procumbens*	Wintergreen	48,006	0

179	*Gentiana lutea*	Gentian	0	0
180	*Geranicum robertianum*	Herb robert	8,780	2
181	*Geranium sylvaticum*	Wood cranesbill	0	0
182	*Gingko biloba, folia*	Gingko biloba, leaves	20,103	1,423
183	*Glycorrhiza glabra*	Liquorice	10,692	1,116
184	*Glyptostrobus pensilis*	China cypress	300,000	250
185	*Gomphidius glutinosus*	Cattle liver mushroom	1,260,000	23
186	*Guduchi Root Powder*	Tinosporia cordifolia	48,006	0
187	*Gymnema sylvestre*	Perploca of the woods	2,023	0
188	*Gynostemmatis pentaphylli, folia*	Gynostemma pentaphylla	20,333	11
189	*Harpagophytum procumbens*	Devil´s claw	2,628,493	67
190	*Hedera helix*	Ivy	30,700	26
191	*Hedychium spicatum*	Hedichium, kapur kachri	2,023	0
192	*Helichrysum italicum, herba)*	Immortelle	45,032	84
193	*Hemerocallis citrina, flos*	Day lily, flower bud	75,000	200
194	*Hemerocallis fulva*	Day lily	60,020	32
195	*Hericium abietis*	Bears head mushroom	1,241,067	110
196	*Hericium erinaceus*	Lion´s mane	83,000	201
197	*Hippophae rhamnoides*	Seabuckthorn	2,351,662	3,543
198	*Hohenbuehelia serotina*	Olive oyster mushroom	8,000	2
199		Honey and beeswax	9,067,500	0
200	*Houttynia cordata, folia*	Heartleaf, folia	20,000	1
201	*Humulus lupulus*	Hops	0	0
202	*Hydnum repandum*	Hedgehog	1,300	1
203	*Hypericum perforatum, herba*	St. John´s wort	1,888,943	75
204	*Illicium anisatum, flos*	Star anise, flowers	350	41
205	*Illicium anisatum, folia*	Star anise, leaves	350	1,300
206	*Imperata cylindrica, radix*	lalang grass	20,000	5
207	*Inula graveolens*	Cape khakiweed	0	0
208	*Inula racemosa*	Pushkarmoola	2,023	0
209	*Iridis florentina, radix*	Iris root	10,000	2
210	*Isatidis indigotica, radix*	Indigowoad root,	20,000	2
211	*Jasmin spp.*	Jasmine	48,006	0
212	*Juglans regia, cortex*	Walnut, bark	29,600	3
213	*Juglans regia, folia*	Walnut, leaves	10,420	10
214	*Juglans regia, fructus*	Walnut kernel	1,378,682	1,888
215	*Juglans sigillata*	Iron walnut	667	6,000
216	*Juniperus communis*	Juniper	11,318,570	375

217	*Juniperus communis var. alpine*	Alpine juniper oil	0	0
218	*Juniperus oxycedrus*	Cade wood	0	0
219	*Lactarius deliciosus*	Lactarius deliciosus	76,300	101
220	*Lactuca virosa*	Wild lettuce	0	0
221	*Laminaria digitata*	Horsetail kelp	0	0
222	*Lamium album, flos*	Dead nettle, flowers	1,650,000	0
223	*Lates niloticus*	Nile pearch	0	30
224	*Laurus nobilis*	Bay laurel, leaves	162,001	121
225	*Lavandula angustifolia*	Lavander	24,088	11
226	*Lavandula stoechas*	Lavander	80	0
227	*Ledum groenlandicum*	Labrador tea	0	0
228	*Lentinus edodes*	Shiitake	603,331	343
229	*Ligusticum spp., radix*	Chunaxiong, rhizome	20,000	1
230	*Lilium lancifolium*	Tiger lily bulb	20,000	1
231		Linden Honey	0	700
232	*Litchi chinensis*	Wild lychi	0	35
233	*Litsea cubeba, fructus*	Mountain pepper	20,000	5
234	*Lonicera japonica, flos*	Honey suckle	22,000	2
235	*Lycopodium clavatum*	Club moss jatamansi	48,006	0
236	*Malus sylvestris*	Wild apple	286,680	1,675
237	*Mangifera indica, fructus*	Mango	4,000	177
238	*Marasmius oreadeas*	Fairy ring mushroom	1,300	1
239	*Marrubium vulgare*	White horehound	8,700	1
240	*Marrubium vulgare*	White horehound	0	0
241	*Matricaria chamomilla, flos*	Chamomile	309,204	168
242	*Melaleuca cajeputti*	Cajeput oil	44	0
243	*Melilotus albus, flos*	White melilot	1,670,000	6
244	*Melissa off.*	Balm	436,580	107
245	*Mentha piperita*	Peppermint	946	7
246	*Mesquite*	Prosopis juliflora	0	0
247	*Messa ferra*	Nagkeshar	2,023	0
248	*Morchella conica*	Morel	65,692	340
249	*Morchella crassipes*	Thick-footed morel	0	30
250	*Morchella esculenta*	White morel	1,000	5
251	*Morinda citrifolia*	Noni fruit	495	20,000
252	*Moringa oleifera*	Horseradish tree	2	2
253	*Murraya koenigii*	Curry leaves	2,023	0
254	*Myrciaria dubia*	Camu camu	145	0

255	*Myristica magnifica*	Nutmeg	2,023	0
256	*Myrtis communis*	Myrtle oil	125,700	15
257	*Nardostachys grandiflora*	Spikenard	0	0
258	*Nasturtium off.*	Watercress	155,003	0
259	*Nymphaea caerulea*	Lotus seed	1,867	10
260	*Ocimum basilicum*	Basil	50	0
261	*Oenocarpus bataua*	Seje oil	100	0
262	*Olea europaea*	Olive	0	0
263	*Ononis spinosa, radix*	Rest-harrow	10,000	5
264	*Orbignya speciosa*	Babassou	10,218	187
265	*Origanum dictamnus*	Dittany of Crete	2	0
266	*Origanum majorana*	Marjoram	12,300	4
267	*Origanum onites*	Black oregano	420	20
268	*Origanum vulgare*	Oregano	128,336	93
269	*Orthosiphon*	Cat's whiskers	0	15
270	*Osmanthus fragrans, flos*	Fragrant olive	22,350	13
271	*Oxalis acetosella*	Wood sorrel	1	0
272	*Panax ginseng*	Ginseng root	15,500	21
273	*Papaver rhoeas, flos*	Field poppy	29,600	13
274	*Parietaria off.*	Pellitory of the wall	80	0
275	*Paullinia cupana*	Guarana	0	0
276	*Pelargonium asperum*	Bourbon geranium	0	0
277	*Perilla frutescens, folia*	Perilla fruit	20,000	1
278	*Persea americana L.*	Avocado pear	101	83
279	*Pholiota nameko*	Nameko	3,333	100
280	*Phyllantus niuri*	Chanca-piedra	2,023	0
281	*Picea balsamea*	Balsam fir	0	0
282	*Picea glauca*	White spruce	0	0
283	*Picea mariana*	Black spruce	0	0
284	*Picea sitchensis*	Sitka spruce	0	0
285	*Pimenta dioica*	Allspice	83,500	0
286	*Pimpinella anisum*	Anise	220	50
287	*Pinellia ternata, radix*	Pinellia tuber	20,000	2
288	*Pinus koraiensis, semen*	Korean pine kernels	1,200,000	60
289	*Pinus nigra, semen*	Austrian p ine seeds	7,423	2,596
290	*Pinus pinaster*	Sea pine	0	0
291	*Pinus resinosa*	Red pine	0	0
292	*Pinus spp., folia*	Pine needles	16,180	640

293	*Pinus spp., semen*	Pine nut kernels	2,199,384	3,108
294	*Pinus sylvestris*	Scotch pine	0	0
295	*Piper longum*	Long pepper	2,023	500
296	*Pistacia lentiscus*	Mastic tree	0	0
297	*Pistacia vera*	Pistachio nut	3,740	0
298	*Plantago asiatica, folia*	Asiatic plantain	20,000	2
299	*Plantago lanceolata*	Lance shaped plantain	18,700	7
300	*Plantago major*	Ribwort plantain	38,830	14
301	*Platycodon grandiflorum, folia*	Balloon Flower	75,000	200
302	*Pleurotus citrinipileatus*	Citrine pleurotus	1,233,333	201
303	*Pleurotus cystidiosus*	Abalone mushroom	27	80
304	*Pleurotus ostreatus*	Oyster mushroom	1,268,867	295
305	*Polygonum multiflorum*	Fo ti root	0	0
306	*Polygonum vulgare, herba*	Buckwheat	10,000	5
307	*Porphyra tenera*	Nori	100	1,800
308	*Portulaca oleracea*	Purslane	20,104	3
309	*Primula spp.*	Primerose	1,841,724	42
310	*Prunus armeniaca, fructus*	Apricot kernels, dried	24,539	1,519
311	*Prunus cerasus*	Sour cherry	3,689	13
312	*Prunus domestica*	Plum	3,745	0
313	*Prunus dulcis*	Almond	5,589	26
314	*Prunus ilicifolia, folia*	Holly-leafed cherry	20,000	5
315	*Prunus spinosa, flos*	Blackthorn, flowers	1,650,000	0
316	*Prunus spinosa, fructus*	Blackthorn	9,568,118	1,022
317	*Pseudotsuga douglasii*	Douglas fir	0	0
318	*Psidium guajava, fructus*	Guava	12,000	23
319	*Pteridium aquilinum var.latiusculum*	Wild brake	138,333	630
320	*Pueraria tuberosa, radix*	Lobed kudzvine root	22,023	25
321	*Quercus spp., fructus*	Acorn	9,207,500	10
322	*Querqus robur, cortex*	Oak bark	530	2
323	*Radix notoginseng*	Sanqi/ pseudoginseng	0	100
324	*Ravensara aromatica*	Ravensara oil	0	0
325	*Rhamnus frangula, cortex*	Alder buckthorn	22,840	10
326	*Rheum rhabarbarum*	Rhubarb	48,006	0
327	*Rhodiola rosea*	Golden root	0	0
328	*Rhodiola, radix*	Rhodiola, radix	1,000	50
329	*Rhododendron anthopogon*	Rhodendron	48,006	0
330	*Rhus coriaria*	Sumac	860	103

331	*Ribes nigrum*	Black currant	881,500	330
332	*Ribes nigrum, folia*	Black currant, leaves	10,000	5
333	*Ribes rubrum*	Red currant	420,000	15
334	*Ribes spp.*	Currant	0	0
335	*Ribes uva-crispa*	Gooseberry	31,000	25
336	*Rosa canina, fructus*	Rosehip	11,800,073	7,782
337	*Rosa canina, semen*	Rosehip seeds	65,500	291
338	*Rosa centifolia*	Rose centrifolia	2,000	4
339	*Rosa laevigata, fructus*	Cherokee rosehip	20,000	2
340	*Rosa rugosa, flos*	Rose flower	20,000	1
341	*Rosa rugosa, fructus*	Rosa rugosa	0	0
342	*Rosmarinus off.*	Rosmary	35,005	29
343	*Rubia cordifolia*	Indian madder	2,023	0
344	*Rubus chamaemorus*	Cloudberry	420,000	58
345	*Rubus chingii, fructus*	Palmleaf raspberry fruit	20,000	3
346	*Rubus fruticosus*	Blackberry	1,800	26
347	*Rubus fruticosus, folia*	Bramble leaves	1,782,570	77
348	*Rubus fruticosus, fructus*	Blackberry	9,891,641	1,390
349	*Rubus idaeus, folia*	Raspberry leaves	1,967,773	76
350	*Rubus idaeus, fructus*	Raspberry	9,669,222	1,769
351	*Rubus loganobaccus*	Logonberry	0	0
352	*Rubus multiflorum*	Name not clarified	120	100
353	*Rubus spp.*	Black- and Raspberry	3,755	712
354	*Rumex acetosa, fructus*	Common sorrel, fruit	530	2
355	*Safflowers*	Safflowers	120	2
356	*Salix alba, cortex*	White willow, bark	20,000	7
357	*Salvia off.*	Sage	264,335	375
358	*Salvia triloba*	Three leaved sage	125,000	30
359	*Sambucus nigra, flos*	Elder tree, flowers	1,818,403	19
360	*Sambucus nigra, folia*	Elder tree, leaves	1,766,722	6
361	*Sambucus nigra, fructus*	Elder tree berries	11,387,553	472
362	*Sanicula chinensis, folia*	Sanicula chinensis (leaf bud)	75,000	100
363	*Santalum album*	Sandalwood oil	0	0
364	*Sapindus emerginatus*	Soapnuts	2,023	0
365	*Sapindus mukorossi*	Soapnuts	100	112
366	*Satureja montana*	Mountain savory	195,922	106
367	*Saussurea involucrata*	Saussurea involucrata	9,867	70
368	*Schisandra chinensis*	Schisandra chinensis	51,755	181

369	*Scutellaria barbata, folia*	Barbat skullcap, folia	20,000	0
370		Sea weed	0	0
371	*Senna alexandrina, folia*	Senna	25	144
372	*Serenoa spp.*	Saw palmetto	134	57
373	*Sida cordifolia*	Country mallow	2,023	0
374	*Solanum indicum*	Indian nightshade	2,023	0
375	*Solanum xanthacarpum*	Yellow nightshade	2,023	0
376	Gymndenl aconpsea	*Name not clarified*	1,500	20
377	*Stellaria media*	Chickweed	0	0
378	*Styrax tonkinensis*	Benzoe	0	10
379	*Suaeda salsa*	Suaeda salsa	2,000	60
380	*Suillus luteus*	Bolete	5,300	60
381	*Symphytum peregrinus*	Comfrey	0	6
382	*Syzygium aromaticum*	Clove tree	100	1
383	*Tanacetum anuum*	Blue chamomile	0	0
384	*Taraxacum mongolicum, folia and radix*	Himalayan dandelion, leaves and root	20,000	2
385	*Taraxacum off., flos*	Dandelion, flowers	10,000	3
386	*Taraxacum off., folia*	Dandelion, leaves	1,700,600	21
387	*Taraxacum off., radix*	Dandelion root	1,721,172	152
388	*Taxodium distichum*	Bald cypress leaf	0	0
389	*Terminalia catappa*	Indian almond	0	4
390	*Terminalia chebula und T. bellarica*	Haritaki and bhibhitaki	52,053	0
391	*Teucrium montanum*	Mountain germander	8,700	2
392	*Themeda triandra*	Kangoroo grass	0	0
393	*Thuja occidentalis*	Cedar leaf	0	0
394	*Thymus linearis*	Himalayan thyme	48,006	0
395	*Thymus serpyllum*	Creeping thyme	32,981	22
396	*Thymus vulgaris*	Thyme	157,313	222
397	*Tilia spp., flos*	Diff. lime tree flowers	2,283,427	425
398	*Tilia spp., folia*	Lime tree, leaves	1,651,417	68
399	*Tinospora cordifolia*	Guduchi root powder	2,023	0
400	*Trapa natans*	Water chestnut	1,867	10
401	*Tremella fuciformis*	Silver ear fungus	3,335	50
402	*Tribulus terristris*	Puncture vine	2,023	0
403	*Tricholoma magnivelare*	Pine mushroom	76,200	28
404	*Tricholoma matsutake*	Matsutake mushroom	800	2
405	*Trifolium albi*	White clover	10,000	2

406	*Trifolium pratense*	Red clover	20,000	3
407	*Trifolium rubrum, flos*	Red clover	19,600	20
408	*Tropaeolum majus*	Cappucine	3	0
409	*Tsuga canadensis*	Hemlock spruce	0	0
410	*Tuber indicum*	Chinese truffle	56,200	308
411	*Tussilago farfara, folia*	Colt´s foot	1,718,830	30
412	*Ulva lactuca*	Green laver, sea lettuce	593	5,450
413	*Uncaria rhynchophylla, folia*	Gambir plant, folia	20,700	7
414	*Uncaria tomentosa*	Cat´s claw	0	0
415	*Urtica dioica, flores*	Stinging nettle, flower	0	2
416	*Urtica dioica, folia*	Stinging nettle, leaves	1,878,053	148
417	*Urtica dioica, radix*	Stinging Nettle, root	31,623	23
418	*Vaccinium macrocarpon*	Cranberry	840,000	750
419	*Vaccinium myrtillus, folia*	Bilberry, leaves	1,653,240	1
420	*Vaccinium myrtillus, fructus*	Blueberry	13,212,757	6,045
421	*Vaccinium oxycoccus*	Small cranberry	200,000	3,000
422	*Vaccinium uliginosum, fructus*	Bog bilberry	226,755	3,704
423	*Vaccinium vitis-idaea, fructus*	Lingonberry	1,548,755	8,050
424	*Valeriana off.*	Valerian	59,946	3
425	*Verbascum spp.*	Common mullein	52,600	10
426	*Verbena off., herba*	Vervain	10,000	5
427	*Veronica officinalis, herba*	Common speedwell, herb	185,800	6
428	*Viola*	Violet, herb	1,663,530	2
429	*Viola odorata*	Violet	0	0
430	*Viola tricolor*	Heartsease	0	0
431	*Viscum album*	Mistletoe	28,703	12
432	*Viscum articulatum*	Mistletoe	629	2
433	*Vitex agnus-castus, fructus*	Chaste-tree, fruit	24,955	14
434	*Vitis spp.*	wild grapes	0	0
435	*Volariella volvacea*	Straw mushroom	3,333	30
436		Wild belfruit	11	0
437		Wild honey	504	333
438	*Zanthoxylum*	Prickly ash	48,006	0
439	*Zingiber off., radix*	Ginger	0	2
440	*Zizania aquatica*	Wild rice	16,000	0
441	*Zizania latifolia*	Wild rice stem, water bamboo	80	50
	Total			**223,754**

5.5.4.1.1.1.1 Sorted by quantity, descending

	Product		Area (ha)	Quantity (t)
Ranking	Scientific name	Common name		
1	*Bambusum vulgaris*	Bamboo shoots	507,076	70,873
2	*Morinda citrifolia*	Noni fruit	495	20,000
3	*Bertholletia excelsa*	Brazil nut	1,234,528	16,073
4	*Vaccinium vitis-idaea, fructus*	Lingonberry	1,548,755	8,050
5	*Rosa canina, fructus*	Rosehip	11,800,073	7,782
6	*Camellia sinensis, semen*	Tea seed for oil	16,755	6,162
7	*Vaccinium myrtillus, fructus*	Blueberry	13,212,757	6,045
8	*Juglans sigillata*	Iron walnut	667	6,000
9	*Ulva lactuca*	Green laver, sea lettuce	593	5,450
10	*Cocos nucifera*	Coconut	1,937	5,175
11	*Agaricus hortensis*	White mushroom	0	4,800
12		Diff. mushrooms, name not clarified	8,907,662	3,771
13	*Vaccinium uliginosum, fructus*	Bog bilberry	226,755	3,704
14	*Hippophae rhamnoides*	Seabuckthorn	2,351,662	3,543
15	*Pinus spp., semen*	Pine nut kernels	2,199,384	3,108
16	*Vaccinium oxycoccus*	Small cranberry	200,000	3,000
17	*Camellia cordifolia*	Camellia cordifolia	10,495	2,758
18	*Pinus nigra, semen*	Austrian pine seeds	7,423	2,596
19	*Butyrrospermum parkii, fructus*	Shea butter	646,000	2,530
20	*Boletus edulis*	King bolete	1,160,456	1,998
21	*Juglans regia, fructus*	Walnut kernel	1,378,682	1,888
22	*Porphyra tenera*	Nori	100	1,800
23	*Rubus idaeus, fructus*	Raspberry	9,669,222	1,769
24	*Malus sylvestris*	Wild apple	286,680	1,675
25	*Prunus armeniaca, fructus*	Apricot kernels, dried	24,539	1,519
26	*Gingko biloba, folia*	Gingko biloba, leaves	20,103	1,423
27	*Rubus fruticosus, fructus*	Blackberry	9,891,641	1,390
28	*Euterpe oleracea*	Palm hearts	1,682	1,365
29	*Illicium anisatum, folia*	Star anise, leaves	350	1,300
30	*Glycorrhiza glabra*	Liquorice	10,692	1,116
31	*Prunus spinosa, fructus*	Blackthorn	9,568,118	1,022
32	*Camellia sinensis, flos*	Tea flowers	1,959	810
33	*Vaccinium macrocarpon*	Cranberry	840,000	750

34	*Rubus spp.*	Black- and Raspberry	3,755	712
35	*Castanea mollissima*	Chinese chestnut	1,077	700
36		Linden Honey	0	700
37	*Allium ursinum*	Bear´s garlic	1,876,177	673
38	*Pinus spp., folia*	Pine needles	16,180	640
39	*Pteridium aquilinum var.latiusculum*	Wild brake	138,333	630
40	*Armillaria mellea*	Honey mushroom	1,458,067	554
41		Diff. MAP species	0	535
42	*Asparagus off.*	Asparagus	108,053	502
43	*Corylus heterophylla, fructus*	Siberian hazelnut	75,000	500
44	*Piper longum*	Long pepper	2,023	500
45	*Auricularia auricula*	Black fungi	1,477,941	499
46	*Fragaria vesca, fructus*	Wild strawberry	145,187	480
47	*Sambucus nigra, fructus*	Elder tree berries	11,387,553	472
48	*Cantharellus cibarius*	Yellow chanterelle/ egg mushroom	1,473,658	448
49	*Fistulina hepatica*	Ox liver mushroom	3,780,000	429
50	*Tilia spp., flos*	Diff. lime tree flowers	2,283,427	425
51	*Acacia senegal*	Gum arabica	0	400
52	*Juniperus communis*	Juniper	11,318,570	375
53	*Salvia off.*	Sage	264,335	375
54	*Crataegus monogyna*	Hawthorn	11,216,648	348
55	*Lentinus edodes*	Shiitake	603,331	343
56	*Morchella conica*	Morel	65,692	340
57		Wild honey	504	333
58	*Ribes nigrum*	Black currant	881,500	330
59	*Tuber indicum*	Chinese truffle	56,200	308
60	*Abies alba, folia*	Silver fir	56,096	300
61	*Pleurotus ostreatus*	Oyster mushroom	1,268,867	295
62	*Rosa canina, semen*	Rosehip seeds	65,500	291
63	*Glyptostrobus pensilis*	China cypress	300,000	250
64	*Aralia elata*	Japanese angelica tree	36,333	246
65	*Thymus vulgaris*	Thyme	157,313	222
66	*Cornus mas*	Cornelian cherry	9,384,800	210
67	*Hericium erinaceus*	Lion´s mane	83,000	201
68	*Pleurotus citrinipileatus*	Citrine pleurotus	1,233,333	201
69	*Hemerocallis citrina, flos*	Day lily, flower bud	75,000	200

70	*Platycodon grandiflorum, folia*	Balloon Flower	75,000	200
71	*Orbignya speciosa*	Babassou	10,218	187
72	*Schisandra chinensis*	Schisandra chinensis	51,755	181
73		Acacia honey	0	180
74	*Mangifera indica, fructus*	Mango	4,000	177
75	*Matricaria chamomilla, flos*	Chamomile	309,204	168
76	*Taraxacum off., radix*	Dandelion root	1,721,172	152
77	*Cyclopia spp.*	Honeybush	0	150
78	*Urtica dioica, folia*	Stinging nettle, leaves	1,878,053	148
79	*Senna alexandrina, folia*	Senna	25	144
80	*Eleuterococcus senticosus*	Siberian ginseng	40,400	142
81	*Foeniculum vulgare, fructus*	Fennel seeds	350	123
82	*Aronia melanocarpa*	Black-berried aronia	9,627,500	121
83	*Laurus nobilis*	Bay laurel, leaves	162,001	121
84		Diff. species, name not clarified	58,000	112
85	*Sapindus mukorossi*	Soapnuts	100	112
86	*Hericium abietis*	Bears head mushroom	1,241,067	110
87	*Melissa off.*	Balm	436,580	107
88	*Satureja montana*	Mountain savory	195,922	106
89	*Ceratonia siliqua*	Carob	0	104
90	*Rhus coriaria*	Sumac	860	103
91	*Lactarius deliciosus*	Lactarius deliciosus	76,300	101
92	*Artemisia integrifolia (leaf bud)*	Common wormwood	75,000	100
93	*Aspalathus linearis*	Rooibush	0	100
94	*Eucalyptus globulus*	Eucalyptus oil	45	100
95	*Pholiota nameko*	Nameko	3,333	100
96	*Radix notoginseng*	Sanqi/ pseudoginseng	0	100
97	*Rubus multiflorum*	Name not clarified	120	100
98	*Sanicula chinensis, folia*	Sanicula chinensis (leaf bud)	75,000	100
99	*Cistus ladaniferus*	Cistus	126,120	95
100	*Origanum vulgare*	Oregano	128,336	93
101	*Helichrysum italicum, herba)*	Immortelle	45,032	84
102	*Arnica montana*	Arnica	1,663,500	83
103	*Persea americana L.*	Avocado pear	101	83
104	*Camellia sasanqua, semen*	Camellia sasanqua, camellia seed, semen	20,000	80
105	*Cymbopogon spp.*	Lemon grass etc.	32	80

106	*Pleurotus cystidiosus*	Abalone mushroom	27	80
107	*Rubus fruticosus, folia*	Bramble leaves	1,782,570	77
108	*Rubus idaeus, folia*	Raspberry leaves	1,967,773	76
109	*Hypericum perforatum, herba*	St. John´s wort	1,888,943	75
110	*Achillea millefolium*	Yarrow	1,920,873	72
111	*Saussurea involucrata*	Saussurea involucrata	9,867	70
112	*Coffea arabica L.*	Coffee beans	39	69
113	*Tilia spp., folia*	Lime tree, leaves	1,651,417	68
114	*Harpagophytum procumbens*	Devil´s claw	2,628,493	67
115	*Crataegus monogyna cum folia*	Hawthorn, fruit and leaves	273,025	61
116	*Pinus koraiensis, semen*	Korean pine kernels	1,200,000	60
117	*Suaeda salsa*	Suaeda salsa	2,000	60
118	*Suillus luteus*	Bolete	5,300	60
119	*Camellia sinensis, folia*	Tea leaves	962	59
120	*Rubus chamaemorus*	Cloudberry	420,000	58
121	*Serenoa spp.*	Saw palmetto	134	57
122	*Atractylodes*	Baishu largehead rhizomes	30,000	50
123	*Cuminum cyminum*	Cumin	180	50
124	*Fritillaria cirrhosadon, fructus*	Fritillaria cirrhosadon	8,000	50
125	*Pimpinella anisum*	Anise	220	50
126	*Rhodiola, radix*	Rhodiola, radix	1,000	50
127	*Tremella fuciformis*	Silver ear fungus	3,335	50
128	*Zizania latifolia*	Wild rice stem, water bamboo	80	50
129	*Azadirachta indica*	Neem tree	72	46
130	*Aphanizomenon Flos Aquae*	Blue green algae	2,024	45
131	*Primula spp.*	Primerose	1,841,724	42
132	*Illicium anisatum, flos*	Star anise, flowers	350	41
133		Diff. nut kernels	0	40
134	*Litchi chinensis*	Wild lychi	0	35
135	*Fibularhizoctonia*	Termite mushroom	46,200	34
136	*Hemerocallis fulva*	Day lily	60,020	32
137	*Cratarellus cornucopioides*	Black chanterelle	7,725	31
138		Bee pollen	0	30
139	*Castanea vesca syn. Sativa*	Edible chestnut	10,420	30
140	*Corylus avellana, fructus*	Hazel nut	10,521	30

141	*Lates niloticus*	Nile pearch	0	30
142	*Morchella crassipes*	Thick-footed morel	0	30
143	*Tussilago farfara, folia*	Colt´s foot	1,718,830	30
144	*Volariella volvacea*	Straw mushroom	3,333	30
145	*Salvia triloba*	Three leaved sage	125,000	30
146	*Rosmarinus off.*	Rosmary	35,005	29
147	*Tricholoma magnivelare*	Pine mushroom	76,200	28
148	*Equisetum arvense*	Field horsetail	1,711,380	26
149	*Hedera helix*	Ivy	30,700	26
150	*Prunus dulcis*	Almond	5,589	26
151	*Rubus fruticosus*	Blackberry	1,800	26
152	*Argania spinosa, fructus*	Argan nut	2,000	25
153	*Pueraria tuberosa, radix*	Lobed kudzvine root	22,023	25
154	*Ribes uva-crispa*	Gooseberry	31,000	25
155	*Crataegus oxycantha*	Red hawthorn	111,261	23
156	*Gomphidius glutinosus*	Cattle liver mushroom	1,260,000	23
157	*Urtica dioica, radix*	Stinging Nettle, root	31,623	23
158	*Psidium guajava, fructus*	Guava	12,000	23
159	*Thymus serpyllum*	Creeping thyme	32,981	22
160	*Centaurium erythraea*	Common centaury	18,780	21
161	*Panax ginseng*	Ginseng root	15,500	21
162	*Taraxacum off., folia*	Dandelion, leaves	1,700,600	21
163	*Fagus spp., fructus*	Beech nut	9,207,500	20
164		Gymndenl aconpsea	1,500	20
165	*Trifolium rubrum, flos*	Red clover	19,600	20
166	*Origanum onites*	Black oregano	420	20
167	*Sambucus nigra, flos*	Elder tree, flowers	1,818,403	19
168	*Brassica napus*	Rapeseed oil	0	15
169	*Orthosiphon*	Cat's whiskers	0	15
170	*Ribes rubrum*	Red currant	420,000	15
171	*Myrtis communis*	Myrtle oil	125,700	15
172	*Plantago major*	Ribwort plantain	38,830	14
173	*Vitex agnus-castus, fructus*	Chaste-tree, fruit	24,955	14
174	*Euphrasia officinalis, herba*	Eyebright, herb	216,043	13
175	*Osmanthus fragrans, flos*	Fragrant olive	22,350	13
176	*Papaver rhoeas, flos*	Field poppy	29,600	13

177	*Prunus cerasus*	Sour cherry	3,689	13
178	*Fraxinus exselsior*	Ash	1,660,000	12
179	*Viscum album*	Mistletoe	28,703	12
180	*Astragalus sinicus, radix*	Milkvetch root,	50,000	11
181	*Castanea hippocastaneum*	Horse chestnut	9,207,500	11
182	*Gynostemmatis pentaphylli, folia*	Gynostemma pentaphylla	20,333	11
183	*Lavandula angustifolia*	Lavander	24,088	11
184	*Aesculus hippocastanum*	Bitter chestnut	167	10
185	*Catathelasma ventricasum*	Catathelasma ventricasum fungus	418,600	10
186	*Cynomorium songaricum*	Suo Yang/ fleshy stem	6,667	10
187		Wild bitter tea, tianshan lushui	333	10
188	*Ephedra sinensis*	Chinese ephedra	6,667	10
189	*Euryale ferox, semen*	Gordon euryale	1,867	10
190	*Juglans regia, folia*	Walnut, leaves	10,420	10
191	*Nymphaea caerulea*	Lotus seed	1,867	10
192	*Quercus spp., fructus*	Acorn	9,207,500	10
193	*Rhamnus frangula, cortex*	Alder buckthorn	22,840	10
194	*Styrax tonkinensis*	Benzoe	0	10
195	*Trapa natans*	Water chestnut	1,867	10
196	*Verbascum spp.*	Common mullein	52,600	10
197	*Althaea off.*	Marsh mallow	38,700	9
198	*Betula pendula, leaves*	Birch	1,668,700	9
199	*Artemisia absinthium*	Wermouth	18,700	8
200	*Cichorium intybus, radix*	Chicory root	29,600	7
201	*Colocarpum zapota*	Mamey/ zapote	14	7
202	*Mentha piperita*	Peppermint	946	7
203	*Plantago lanceolata*	Lance shaped plantain	18,700	7
204	*Salix alba, cortex*	White willow, bark	20,000	7
205	*Uncaria rhynchophylla, folia*	Gambir plant, folia	20,700	7
206	*Althea officinalis, radix*	Marsh mallow, root	530	6
207	*Clavaria spp.*	Coral mushrooms	418,600	6
208	*Corylus avellana, folia*	Hazel nut, leaves	1,650,000	6
209	*Crataegus monogyna, folia*	Hawthorn, leaves	1,660,000	6
210	*Melilotus albus, flos*	White melilot	1,670,000	6
211	*Sambucus nigra, folia*	Elder tree, leaves	1,766,722	6
212	*Symphytum peregrinus*	Comfrey	0	6

213	*Veronica officinalis, herba*	Common speedwell, herb	185,800	6
214	*Adonis vernalis, herba*	Spring pheasant´s eye	1,650,000	5
215	*Capsella bursa-pastoris*	Shepherd´s purse	18,702	5
216	*Chimonanthus praecox, folia*	Wintersweet	20,000	5
217	*Condonopsis, radix*	Danghsen condonopsis roots	30,000	5
218	*Drynaria fortunei, radix*	Fortune´s drynaria rhizome	20,000	5
219	*Drypteris filix-mas, radix*	Male fern	1,650,000	5
220	*Fragaria vesca, folia*	Wild strawberry, leaves	19,600	5
221	*Imperata cylindrica, radix*	lalang grass	20,000	5
222	*Litsea cubeba, fructus*	Mountain pepper	20,000	5
223	*Morchella esculenta*	White morel	1,000	5
224	*Ononis spinosa, radix*	Rest-harrow	10,000	5
225	*Polygonum vulgare, herba*	Buckwheat	10,000	5
226	*Prunus ilicifolia, folia*	Holly-leafed cherry	20,000	5
227	*Ribes nigrum, folia*	Black currant, leaves	10,000	5
228	*Verbena off., herba*	Vervain	10,000	5
229	*Agrimonia eupatoria*	Agrimony	11,700	4
230	*Agropyron repens, radix*	Couch grass	19,600	4
231		Diff. herbs, name not clarified	558,025	4
232	*Origanum majorana*	Marjoram	12,300	4
233	*Rosa centifolia*	Rose centrifolia	2,000	4
234	*Terminalia catappa*	Indian almond	0	4
235	*Arctium lappa, radix*	Major burdock, root	20,130	3
236	*Arctostaphyllos uva-ursi, folia*	Bearberry, leaves	11,100	3
237	*Cassia tora, Seeds*	Sicklepod	20,000	3
238	*Juglans regia, cortex*	Walnut, bark	29,600	3
239	*Portulaca oleracea*	Purslane	20,104	3
240	*Rubus chingii, fructus*	Palmleaf raspberry fruit	20,000	3
241	*Taraxacum off., flos*	Dandelion, flowers	10,000	3
242	*Trifolium pratense*	Red clover	20,000	3
243	*Valeriana off.*	Valerian	59,946	3
244	*Achillea millefolium, flores*	Yarrow, flowers	13,240	2
245	*Artemisia dracunculus*	Tarragon	50	2
246	*Asarum europaeum, folia*	European snake-root	1,650,000	2
247	*Betula pendula, cortex*	Birch bark	530	2
248	*Bidens tripartita, herba*	Treelobe beggarticks	530	2

249	*Centaurea cyanus*	Cornflower	20,000	2
250	*Certraria islandica*	Iceland moss	1,650,000	2
251	*Chrysanthemum morifolium flos*	Indian dendranthema flower	20,000	2
252	*Cinnamomum cassia, cortex*	Cassia bark, cortex	20,000	2
253	*Crataegus pinnatifida, fructus*	Hawthorn fruit	20,000	2
254	*Eletteria cardamomum*	Cardamom	80	2
255	*Epilobium parviflorum*	Hairy willowherb	8,700	2
256	*Eriobotrya japonica, folia*	Loquat leaf	20,000	2
257	*Geranicum robertianum*	Herb robert	8,780	2
258	*Hohenbuehelia serotina*	Olive oyster mushroom	8,000	2
259	*Iridis florentina, radix*	Iris root	10,000	2
260	*Isatidis indigotica, radix*	Indigowoad root,	20,000	2
261	*Lonicera japonica, flos*	Honey suckle	22,000	2
262	*Moringa oleifera*	Horseradish tree	2	2
263	*Pinellia ternata, radix*	Pinellia tuber	20,000	2
264	*Plantago asiatica, folia*	Asiatic plantain	20,000	2
265	*Querqus robur, cortex*	Oak bark	530	2
266	*Rosa laevigata, fructus*	Cherokee rosehip	20,000	2
267	*Rumex acetosa, fructus*	Common sorrel, fruit	530	2
268	*Safflowers*	Safflowers	120	2
269	*Taraxacum mongolicum, folia and radix*	Himalayan dandelion, leaves and root	20,000	2
270	*Teucrium montanum*	Mountain germander	8,700	2
271	*Tricholoma matsutake*	Matsutake mushroom	800	2
272	*Trifolium albi*	White clover	10,000	2
273	*Urtica dioica, flores*	Stinging nettle, flower	0	2
274	*Viola*	Violet, herb	1,663,530	2
275	*Viscum articulatum*	Mistletoe	629	2
276	*Zingiber off., radix*	Ginger	0	2
277	*Adansonia digitata and Sclerocarya birrea; Triquila unknown*	Baobab, marula and triquila oil	0	2
278	*Galium aperine*	Cleavers	0	2
279	*Aconitum, radix*	Aconite, root	1,650,000	1
280	*Acorus calamus*	Calamus	56,706	1
281	*Actinidia chinensis, fructus*	Chinese gooseberry	22,000	1
282	*Agathosma betulina*	Buchu	0	1
283	*Alchemilla vulgaris*	Lady´s mantle	8,700	1
284	*Anethum graveolens*	Dill	100	1

285	*Anthyllidis vulneraria, flos*	Common kidneyvetch	1,650,000	1
286	*Artemisia argyui, folia*	Argy wormwood leaf	20,000	1
287	*Astragalus sinicus, flos*	Chinese melkvetch, flos	20,000	1
288	*Benincasa hispida, semen*	Wax gourd, seed	20,000	1
289	*Boletus aurantiatum*	Bolete not specified	420,000	1
290	*Citrus reticulata*	Orange peel	20,000	1
291	*Crataegus spp*	Hawthorn	3,000	1
292	*Crocus sativus*	Saffron, quality "coupe"	5	1
293	*Cucurbita spp., semen*	Cu shaw seed	20,000	1
294	*Filipendula ulmaria, flos*	Meadowsweet	1,650,000	1
295	*Gardenia jasminoides, fructus*	Cape jasmine fruit	20,000	1
296	*Houttynia cordata, folia*	Heartleaf, folia	20,000	1
297	*Hydnum repandum*	Hedgehog	1,300	1
298	*Ligusticum spp., radix*	Chunaxiong, rhizome	20,000	1
299	*Lilium lancifolium*	Tiger lily bulb	20,000	1
300	*Marasmius oreadeas*	Fairy ring mushroom	1,300	1
301	*Marrubium vulgare*	White horehound	8,700	1
302	*Perilla frutescens, folia*	Perilla fruit	20,000	1
303	*Rosa rugosa, flos*	Rose flower	20,000	1
304	*Syzygium aromaticum*	Clove tree	100	1
305	*Vaccinium myrtillus, folia*	Bilberry, leaves	1,653,240	1
306	*Acer saccharum*	Maple syrup	0	0
307	*Aconitum*	Iron hut	48,006	0
308	*Adatoda vasika*	Bansa	2,023	0
309	*Aegle marmelos*	Bengal quince	2,023	0
310	*Amanita caesarea*	Caesars mushroom	730	0
311	*Amaranthus blitus*	Strawberry blite	7	0
312	*Ananas comosus*	Pineapple	20	0
313	*Angelica archangelica*	Angelica	0	0
314	*Arbustus unedo*	Strawberry tree	0	0
315	*Artemisia annua*	Sweet sagewort	1,000	0
316	*Artemisia spp.*		48,006	0
317	*Ascophyllum nodosum*	Knotted sea-wrack	0	0
318	*Asparagus racimosus*	Satavari	2,023	0
319	*Bacopa monnerie*	Brahmi	2,023	0
320		Bee wax	0	0

321	*Betula pubescens*	Birch	0	0
322	*Boerhaavia diffusa*	Purnava	2,023	0
323	*Brosimum allicastrum*	Ramon nut	83,500	0
324	*Calendula off.*	Marigold	3	0
325	*Calluna vulgaris*	Common ling	0	0
326	*Caparius spinosa*	Caper	245	0
327	*Centella asiatica*	Gotu kola	2,023	0
328	*Cinnamomum glaucescens*	Sugandha kokila	48,006	0
329	*Cinnamomum tamala*	Tamala	48,006	0
330	*Cinnamomum zeylanicum*	Cinnamon	2,023	0
331	*Cordyceps sinensis*	Caterpillar fungus	2,000	0
332	*Cymbopogon citratus*	Lemon grass	2,023	0
333	*Cyprus rotundus*	Nut grass	2,023	0
334		Diff. berries	5	0
335		Diff. fruits, name not clarified	0	0
336	*Embelia ribes*	False pepper	2,023	0
337	*Emblica off.*	Amla	50,029	0
338	*Empetrum nigrum*	Black crowberry	0	0
339	*Epilobium angustifolium*	Flowering willow	0	0
340	*Fumaria off.*	Common furmatory	80	0
341	*Galium verum*	Yellow bedstraw/ cleaver	0	0
342	*Gallium ordoratum*	Sweet woodruff	5	0
343		Game, no specification	0	0
344	*Garcinia combogia*	Garcinia	2,023	0
345	*Garcinia indica*	Garcinia	2,023	0
346	*Gaultheria procumbens*	Wintergreen	48,006	0
347	*Geranium sylvaticum*	Wood cranesbill	0	0
348	*Guduchi Root Powder*	Tinosporia cordifolia	48,006	0
349	*Gymnema sylvestre*	Perploca of the woods	2,023	0
350	*Hedychium spicatum*	Hedichium, kapur kachri	2,023	0
351		Honey and beeswax	9,067,500	0
352	*Inula racemosa*	Pushkarmoola	2,023	0
353	*Jasmin spp.*	Jasmine	48,006	0
354	*Laminaria digitata*	Horsetail kelp	0	0
355	*Lamium album, flos*	Dead nettle, flowers	1,650,000	0
356	*Lavandula stoechas*	Lavander	80	0

357	*Lycopodium clavatum*	Club moss jatamansi	48,006	0
358	*Melaleuca cajeputti*	Cajeput oil	44	0
359	*Messa ferra*	Nagkeshar	2,023	0
360	*Murraya koenigii*	Curry leaves	2,023	0
361	*Myrciaria dubia*	Camu camu	145	0
362	*Myristica magnifica*	Nutmeg	2,023	0
363	*Nasturtium off.*	Watercress	155,003	0
364	*Ocimum basilicum*	Basil	50	0
365	*Oenocarpus bataua*	Seje oil	100	0
366	*Olea europaea*	Olive	0	0
367	*Origanum dictamnus*	Dittany of Crete	2	0
368	*Oxalis acetosella*	Wood sorrel	1	0
369	*Parietaria off.*	Pellitory of the wall	80	0
370	*Phyllantus niuri*	Chanca-piedra	2,023	0
371	*Pimenta dioica*	Allspice	83,500	0
372	*Pistacia vera*	Pistachio nut	3,740	0
373	*Prunus domestica*	Plum	3,745	0
374	*Prunus spinosa, flos*	Blackthorn, flowers	1,650,000	0
375	*Rheum rhabarbarum*	Rhubarb	48,006	0
376	*Rhodiola rosea*	Golden root	0	0
377	*Rhododendron anthopogon*	Rhodendron	48,006	0
378	*Ribes spp.*	Currant	0	0
379	*Rosa rugosa, fructus*	Rosa rugosa	0	0
380	*Rubia cordifolia*	Indian madder	2,023	0
381	*Rubus loganobaccus*	Logonberry	0	0
382	*Santalum album*	Sandalwood oil	0	0
383	*Sapindus emerginatus*	Soapnuts	2,023	0
384	*Scutellaria barbata, folia*	Barbat skullcap, folia	20,000	0
385		Sea weed	0	0
386	*Sida cordifolia*	Country mallow	2,023	0
387	*Solanum indicum*	Indian nightshade	2,023	0
388	*Solanum xanthacarpum*	Yellow nightshade	2,023	0
389	*Terminalia chebula und T. bellarica*	Haritaki and bhibhitaki	52,053	0
390	*Themeda triandra*	Kangoroo grass	0	0
391	*Thymus linearis*	Himalayan thyme	48,006	0
392	*Tinospora cordifolia*	Guduchi root powder	2,023	0

393	*Tribulus terristris*	Puncture vine	2,023	0
394	*Tropaeolum majus*	Cappucine	3	0
395	*Vitis spp.*	wild grapes	0	0
396		Wild belfruit	11	0
397	*Zanthoxylum*	Prickly ash	48,006	0
398	*Zizania aquatica*	Wild rice	16,000	0
399	*Pelargonium asperum*	Bourbon geranium	0	0
400	*Crithmum maritimum*	Sea fennel	0	0
401	*Juniperus oxycedrus*	Cade wood	0	0
402	*Cedrus atlantica*	Cedar wood Atlas	0	0
403	*Eucalyptus radiata*	Narrow-leaved peppermint	0	0
404	*Citrus clementine*	Clementine Petitgrain Leaf	0	0
405	*Taxodium distichum*	Bald cypress leaf	0	0
406	*Eucalyptus camaludensis*	White box	0	0
407	*Picea balsamea*	Balsam fir	0	0
408	*Pseudotsuga douglasii*	Douglas fir	0	0
409	*Abies grandis*	Grand fir	0	0
410	*Inula graveolens*	Cape khakiweed	0	0
411	*Juniperus communis var. alpine*	Alpine juniper oil	0	0
412	*Ledum groenlandicum*	Labrador tea	0	0
413	*Pistacia lentiscus*	Mastic tree	0	0
414	*Cymbopogon martinii*	Palmarosa oil	0	0
415	*Pinus resinosa*	Red pine	0	0
416	*Pinus pinaster*	Sea pine	0	0
417	*Pinus sylvestris*	Scotch pine	0	0
418	*Ravensara aromatica*	Ravensara oil	0	0
419	*Nardostachys grandiflora*	Spikenard	0	0
420	*Picea mariana*	Black spruce	0	0
421	*Tsuga canadensis*	Hemlock spruce	0	0
422	*Picea sitchensis*	Sitka spruce	0	0
423	*Picea glauca*	White spruce	0	0
424	*Tanacetum anuum*	Blue chamomile	0	0
425	*Thuja occidentalis*	Cedar leaf	0	0
426	*Arachis hypogaea*	Wild peanuts	0	0
427	*Uncaria tomentosa*	Cat´s claw	0	0
428	*Mesquite*	Prosopis juliflora	0	0

429	*Angelica sinensis*	Dang gui	0	0
430	*Viola tricolor*	Heartsease	0	0
431	*Humulus lupulus*	Hops	0	0
432	*Polygonum multiflorum*	Fo ti root	0	0
433	*Boswellia thurifera*	Frankincense	0	0
434	*Gentiana lutea*	Gentian	0	0
435	*Paullinia cupana*	Guarana	0	0
436	*Viola odorata*	Violet	0	0
437	*Ganoderma lucidum*	Reishi mushroom powder	0	0
438	*Lactuca virosa*	Wild lettuce	0	0
439	*Dioscorea villosa*	Wild yam	0	0
440	*Marrubium vulgare*	White horehound	0	0
441	*Stellaria media*	Chickweed	0	0
	Total			**223,754**

Annex 7
Reported number of projects, registered collection area (ha) and harvest quantity[65] (t) per country[66], sorted by size of registered area, descending, 2005

Country	Number of projects	Registered area (ha)	Quantity (t)
Romania	17	15,927,862	10,320
Kenya	2	15,080,028	0
Zambia	2	9,067,500	322
Finland	1	7,507,614	312
Azerbaijan	1	3,200,000	0
China	103	2,252,900	135,885
South Africa	3	1,904,600	316
Russia	5	859,070	9,530
Namibia	1	728,493	2
Bolivia	4	722,387	12,572
Uganda	2	635,000	30
Macedonia	3	559,200	234
Serbia and Montenegro	10	520,200	1,773
Uzbekistan	1	500,000	76
Bulgaria	17	447,775	5,282
Brazil	6	367,851	2,798
Ukraine	3	207,000	640
Iceland	2	200,305	0
Turkey	20	191,131	941
Spain	2	184,972	101
Peru	3	156,335	1,404
Canada	620	150,000	0
Albania	7	140,551	1,183
Poland	5	113,201	519
Guatemala	1	83,500	0
Nepal	3	48,006	100
Bosnia and Herzegovina	8	45,967	1,564
Kyrgyzstan	1	40,000	0
US	28	30,000	102

[65] 0 indicates that data is not available.
[66] Tasmania belongs to Australia, but is treated separately

Fiji	2	16,040	20,200
Burkina Faso	3	15,800	2,415
Thailand	2	11,784	13
India	6	10,000	523
Chile	5	8,728	3,806
Morocco	8	7,000	25
Lebanon	2	6,800	0
Ecuador	1	5,300	60
Dominican Republic	3	2,199	5,386
Ghana	1	1,000	115
Hungary	1	600	396
Czech Republic	2	500	30
Egypt	1	442	160
Syria	1	400	361
Denmark	1	375	0
Austria	2	250	0
Greece	9	136	16
Colombia	1	120	0
Estonia	1	119	0
Armenia	1	111	2
Lesotho	1	100	1,000
France	4	100	28
Portugal	7	80	0
Germany	12	75	78
New Zealand	1	50	0
Vietnam	1	44	0
Belgium	1	4	0
Guayana	1	0	850
Sweden	2	0	749
Indonesia	1	0	500
Chad	1	0	400
Croatia	3	0	210
Moldova	2	0	400
Laos	1	0	25
Iran	1	0	0
Australia, excluding Tasmania	4	0	0

Tasmania*	1	0	0
New Caledonia	1	0	0
Sri Lanka	0	0	0
Madagascar	0	0	0
Ireland	0	0	0
United Kingkom	0	0	0
Norway	0	0	0
Total	**979**	**61,959,605**	**223,754**

Sorted by harvested quantity, descending, 2005

	Number of projects	Registered area (ha)	Quantity (t)
Country			
China	103	2,252,900	135,885
Fiji	2	16,040	20,200
Bolivia	4	722,387	12,572
Romania	17	15,927,862	10,320
Russia	5	859,070	9,530
Dominican Republic	3	2,199	5,386
Bulgaria	17	447,775	5,282
Chile	5	8,728	3,806
Brazil	6	367,851	2,798
Burkina Faso	3	15,800	2,415
Serbia and Montenegro	10	520,200	1,773
Bosnia and Herzegovina	8	45,967	1,564
Peru	3	156,335	1,404
Albania	7	140,551	1,183
Lesotho	1	100	1,000
Turkey	20	191,131	941
Guayana	1	0	850
Sweden	2	0	749
Ukraine	3	207,000	640
India	6	10,000	523
Poland	5	113,201	519
Indonesia	1	0	500
Chad	1	0	400
Moldova	2	0	400
Hungary	1	600	396
Syria	1	400	361
Zambia	2	9,067,500	322
South Africa	3	1,904,600	316
Finland	1	7,507,614	312
Macedonia	3	559,200	234
Croatia	3	0	210
Egypt	1	442	160
Ghana	1	1,000	115

US	28	30,000	102
Spain	2	184,972	101
Nepal	3	48,006	100
Germany	12	75	78
Uzbekistan	1	500,000	76
Ecuador	1	5,300	60
Uganda	2	635,000	30
Czech Republic	2	500	30
France	4	100	28
Morocco	8	7,000	25
Laos	1	0	25
Greece	9	136	16
Thailand	2	11,784	13
Namibia	1	728,493	2
Armenia	1	111	2
Kenya	2	15,080,028	0
Azerbaijan	1	3,200,000	0
Iceland	2	200,305	0
Canada	620	150,000	0
Guatemala	1	83,500	0
Kyrgyzstan	1	40,000	0
Lebanon	2	6,800	0
Denmark	1	375	0
Austria	2	250	0
Colombia	1	120	0
Estonia	1	119	0
Portugal	7	80	0
New Zealand	1	50	0
Vietnam	1	44	0
Belgium	1	4	0
Iran	1	0	0
Australia, excluding Tasmania	4	0	0
Tasmania	1	0	0
New Caledonia	1	0	0
Sri Lanka	0	0	0
Madagascar	0	0	0

Ireland	0	0	0
United Kingdom	0	0	0
Norway	0	0	0
Total	**979**	**61,959,605**	**223,754**

Street address
International Trade Centre
54-56 Rue de Montbrillant
1202 Geneva, Switzerland

P: +41 22 730 0111
F: +41 22 733 4439
E: itcreg@intracen.org
www.intracen.org

Postal address
International Trade Centre
Palais des Nations
1211 Geneva 10, Switzerland