

Guidance Manual for Implementing the International Standard for Sustainable Wild  
Collection of Medicinal and Aromatic Plants (ISSC-MAP)

FRAMEWORK FOR DEVELOPING AN ADAPTIVE  
**MANAGEMENT PLAN**  
FOR SUSTAINABLE COLLECTION OF WILD PLANTS

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International Standard for Sustainable Wild Collection of Medicinal and Aromatic Plants



**TRAFFIC**  
the wildlife trade monitoring network

**IUCN**  
The World Conservation Union



MEDICINAL  
PLANT  
SPECIALIST  
GROUP



Traditional Medicinals®

# Preface

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This guidance manual on ISSC-MAP Management Planning is intended to provide users of the ISSC-MAP (companies, collectors associations, resource managers, certifiers, etc.) with detailed, easy to understand information on contents and modes of creation of a Management Plan that aids compliance with the requirements of the Standard.

## Structure

This guidance manual consists of three parts:

**Part A** includes an introduction, definitions and the basic principles and approach of resource management.

**Part B** deals with the preparation of an adaptive Management Plan, its implementation and monitoring. This part of the guidance manual is structured as a sample Management Plan, a matrix containing all chapters and contents required in the ISSC-MAP Standard. It also includes a chapter listing the required documents to be annexed to the Management Plan.

**Part C** comprises **Annexes** that provide formats or examples of required or suggested documents mentioned in Part B.

**Each chapter of Part B** of this guidance manual contains the following information:

1) ISSC-MAP criteria relevant to the corresponding chapter of the Management Plan are highlighted

*These are the criteria set in the ISSC-MAP Standard for achieving a sustainable management system; i.e., in principle they must be implemented for ISSC-MAP certification or compliance.*

*Several procedures or actions might be necessary to fulfil one single criterion. Thus, some of the criteria will be relevant and, therefore, appear in more than one chapter or component of the Management Plan.*

2) Management Plan content and supporting documents

Descriptions of the information that should be provided by the resource managers for each chapter.



Describes a separate document, which should be prepared and kept by the collection operation / resource manager, and includes procedures or steps to be followed to develop certain aspects of the Management Plan



Describes a formal document, which is issued by a third party such as relevant authorities, external experts etc.

## Comments and Suggestions

These may include examples of procedures that have already proven to work well or explanations regarding the background of a certain requirement.

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## Part A: Introduction

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### **What is a Management Plan?**

A Management Plan is a written document in which the resource management sets out its goals and the approaches it will use to accomplish those goals in a given period of time. The ISSC-MAP Management Plan sets forth standards and procedures, responsibilities and work practices required to fulfil the principles of the ISSC-MAP Standard.

### **Why is a Management Plan needed?**

The management of natural resources with the aim of ensuring their long term survival cannot be improvised. A Management Plan that has been carefully worked out is essential to guarantee the sustainability of wild collection and to ensure that activities are undertaken to protect the resource(s) and habitat(s) and that systems are in place to monitor the resource(s), habitat(s) and impacts of resource use.

A Management Plan also contains rules and responsibilities for all actors involved.

### **Who is responsible for the development of a Management Plan and who has to be involved?**

The Management Plan should be developed by the responsible resource authority or resource management entity. The Resource Management is the person or organization that has the right to use and manage the area and its resources, and is responsible for protecting it from unauthorized or illegal activities (see box below).

In some cases, a collection operation may be developing and implementing the Management Plan, even if another organization (e.g. Forest Department or other authority) is formally responsible for resource management. It may be beneficial if the collection operation promotes the involvement of the formal resource management in order to get its long term approval of resource use and management.

Collectors' organizations and local communities affected by collection activities need to be actively involved in the development and implementation of the resource Management Plan. Care needs to be taken that participatory structures are developed to involve these stakeholders, Intellectual Property Rights are considered, and that Access and Benefit Sharing (ABS) provisions are observed if applicable (see ISSC-MAP policy on ABS). Local authorities, collection companies and other local stakeholders need to be involved at all planning steps so that they get a sense of "ownership" of and responsibility for the final plan.

### **Who is responsible for resource management?**

In the case of public land, the Forest Department or similar authority is formally responsible for resource management. It is important that the responsible authority integrates all stakeholders, who use the resource and / or habitats, such as collection organizations or companies, into the decision making process, for example through establishing a Management Committee.

If the collection area is under the responsibility of one or more local communities, a collection company or collectors' group, the resource management will be carried out by these groups or a person or organization mandated with resource or area management. This is the predominant management structure on communal or private land or in the case of long-term lease agreements of state land.

If several collection companies work in the same area without an effective central management from the Forest Department or a similar institution, a **Management Committee** should be formed by the different companies, involving all relevant stakeholders. If possible, the responsible authority should be involved in all steps and informed of all planned activities. The Management Committee will be responsible for the development, implementation and monitoring of the Management Plan.

It is essential that the Management Plan works within the framework of existing national, supranational and / or regional legislation and other Management Plans which are in place in the area. These can be e.g. Protected Area Management Plans, land or forest Management Plans, communal development plans and others. Integration of Management Plans should be formalized and discussed with the relevant authorities and / or organizations at an early stage to avoid or sort out in time potential conflicts resulting from different interests.

### **When should the Management Plan be prepared?**

Since the Management Plan must be adapted to the local situation and to the collected species, it can only be prepared once the overall situation of the operation has been defined and analysed. The following chapter provides suggestions on preparatory steps of Management Plan development (questions 1 - 3) and monitoring (question 4).

### **Leading questions: How to develop a Management Plan?**

#### **Question 1: What is the status quo? - Situation Analysis**

All steps related to the situation analysis are covered in more detail in chapters 2 to 6 of the Management Plan Matrix (Part B of this document).

#### Step A. Defining the operation

The first step for the preparation of an adaptive Management Plan is the definition of the management and collection operation:

- Identification of the borders of the collection areas. A comprehensive description of the area (including habitat characterization) is important in order to identify sensitive species and habitats as well as potential sources of contamination.
- The target species must be accurately identified and their biological characteristics, extraction methods and effects on other species known and described.
- Definition of the collection operation: Is it a commercial company, a collectors' group or cooperative, local community collection and management? Is it a single collection operation or are there several companies / organizations / communities active in the area? Is a single species or a single part of the species extracted or are various species being collected and / or multiple parts of the same species used?

#### Step B. Review of stakeholders and existing management systems / collection practices

All activities that affect the collection area and the collected species should be identified. All management objectives should be considered (conservation areas, regeneration areas, etc.), all stakeholders involved identified (land owners and resource management, responsible authorities, traditional users, collection companies active in the area, collector groups etc.) and collection methods (traditional; scientific; etc.) reviewed.

## **Question 2: What is the objective of Management Planning?**

### Step C. Needs assessment

With information on the local situation in hand, the Resource Management is in a good position to assess what needs to be changed, adapted or improved in order to achieve compliance with the ISSC-MAP requirements.

- What aspects of the ISSC-MAP standard does the operation comply with already?
- What are the most critical and the most difficult requirements to comply with and what are the reasons for these difficulties?
- What needs to be changed, adapted or improved to achieve compliance with the ISSC-MAP?
- What steps will have to be taken or structures / mechanisms to be established to ensure continuous compliance with the ISSC-MAP?

Needs can be grouped into three categories, although some may fall into more than one category:

### **Biological needs**

Needs related to the resource. Examples are:

- Increase of species and age diversity to provide long-term habitat stability;
- Adaptation of collection practices to reduce damage to the habitat(s) or collected plant(s);
- Research into optimum sustainable yield data.

### **Management needs**

Needs of those involved in the short- and long-term management of the area and target resources:

- Adequate training and education of collectors to ensure sustainability of collection and to minimize waste caused by poor collection practices;
- Coordination of activities of different actors (e.g. collection operation; forest department);
- Improvement of documentation and record keeping to ensure traceability;
- Improvement of quality control to ensure that market / buyer requirements are met.

### **Community needs**

Needs relating to how the local stakeholders and users perceive and interact with the natural resources / habitats and the Management Planning process, e.g.:

- Increasing awareness of the benefits associated with sustainable collection methods;
- Promotion of good collection practices through better understanding of the biological needs of the species;
- Foster community support for the Management Planning process.

### Step D. Management objectives

Once the present situation and needs are known, the goals of the Management Plan can be set to address identified needs and to guide the development of the management strategy (see also chapter 1 in Part B of this document).

## **Question 3: How to achieve the aims of the operation?**

The steps related to this question are addressed in chapters 7 to 9 of the Management Plan Matrix (Part B of this document).

### Step E. Development of Management Procedures

The objective of this step is to develop management procedures that address the goals of the operation:

- What procedures need to be applied so that compliance with the ISSC-MAP can be ensured?
- Description of all management procedures, including their potential impacts (see chapter 9).
- The resulting management practices and internal collection and handling rules should be summarized in simple words.

Feasibility, practicality, legality, and economic viability should be considered in selecting appropriate management tools. The responsibilities of each party should be clearly outlined and include funding needs, training requirements, organization of the collectors and marketing.

- Exploration of funding opportunities;
- All key stakeholders should take part in the development process and take on clear roles and responsibilities;
- All involved parties must receive appropriate training and understand their commitments;
- The Management Plan should include all aspects required to meet ISSC-MAP criteria.

Minimal contents and considerations that need to be included in the Management Plan are outlined in Table 1 of this guidance manual.

### Step F. Implementation of the Management Plan

Although a plan may appear ideal on paper, it cannot achieve anything unless implemented. This requires the commitment of financial and personnel resources to coordinate stakeholder meetings, organize training and capacity building and carry out other components of the management strategy. It may take some time to implement the management strategy fully and reach ISSC-MAP compliance. Therefore, it is useful to map out an implementation schedule. As sourcing parameters and external factors affecting these are constantly changing, the Management Plan must be continuously adapted.

### **Question 4: Does the Management Plan achieve what it set out to achieve?**

### Step G. Monitoring, evaluation and revision of the Management Plan

The implementation of the Management Plan should be monitored regularly to identify its impacts and to ensure that its objectives are met. Evaluation provides the feedback necessary to determine whether the Management Plan is working. Regular monitoring as part of the management process allows timely identification of negative impacts and adaptation needs.

This step is being addressed in chapters 10 and 11 of the Management Plan Matrix (Part B of this guidance document).

## Part B: Management Plan Matrix

- ***A species / area Management Plan defines adaptive, practical management processes and good collection practices [ISSC-MAP criterion 5.1]***

Part B of this guidance document is structured as a Management Plan. All chapters listed in the following table should be included in a Management Plan. In the following pages each chapter will be discussed and suggestions given on how to obtain the necessary information and develop the required procedures. The Resource Management Team is free to include additional requirements.

**Table 1: Suggested Contents of an ISSC-MAP Management Plan**

	<b>Chapter</b>	<b>Type of Information/ subchapters</b>
1.	Background	<ul style="list-style-type: none"> <li>• Text outlining the main information about the area, structure of the wild collection operation, species targeted for collection, etc.</li> <li>• Goals and objectives of the Management Plan</li> </ul>
2.	The collection area	<ul style="list-style-type: none"> <li>• Description of the area</li> <li>• Identification of sensitive species and habitats</li> <li>• Protected areas or sensitive sites within or next to collection areas</li> <li>• Indication of populations of target species on maps</li> <li>• Maps of the entire area covered by the Management Plan (overview map; smaller scale detailed maps), including collection areas, type of vegetation, settlements, road or similar infrastructure, farming zones etc., as available</li> <li>• Sites not suitable for and / or excluded from collection</li> </ul>
3.	Social and institutional situation	<ul style="list-style-type: none"> <li>• Ownership of the collection area / tenure rights</li> <li>• Traditional uses and customary rights in the collection area</li> <li>• Identification of all stakeholders (organizations and individuals)</li> <li>• Other management objectives</li> </ul>
4.	The target species	<ul style="list-style-type: none"> <li>• Conservation status assessment</li> <li>• Description of the species, associated habitats and collection methods</li> <li>• Uses of the collected plant(s) / plant part(s)</li> <li>• Importance of the species for the operation, collectors' communities and other stakeholders</li> <li>• Specific functions in the ecosystem</li> <li>• Quality and market requirements</li> </ul>
5.	Resource assessment information	<ul style="list-style-type: none"> <li>• Resource assessment planning and methods</li> <li>• Resource assessment data (including brief analyses)</li> <li>• Resource mapping (marking of growing locations in collection plots)</li> </ul>
6.	The collection operation	<ul style="list-style-type: none"> <li>• Description and structure of the operator and the collection operation, including the national and international legislative context</li> <li>• Collectors (list of collectors, collector contracts, socio-economic context, responsibilities, accountability, collector payment, levies / taxes etc.)</li> <li>• Description of the responsibilities of the supervision body</li> </ul>
7.	Working plan	<ul style="list-style-type: none"> <li>• Management procedures and responsibility matrix</li> <li>• Management Planning steps and implementation time frame</li> </ul>
8.	Internal instructions and procedures of the collection operation	<ul style="list-style-type: none"> <li>• Internal Quality Standard</li> <li>• Instructions for collection and handling by collectors</li> <li>• Purchase procedures</li> <li>• Storage, processing and handling procedures</li> <li>• Training and capacity building</li> <li>• Product demand and market requirements</li> </ul>
9.	Risk assessment and potential negative impacts: identification and strategies for prevention	<ul style="list-style-type: none"> <li>• Risk assessment</li> <li>• Identification of negative impacts of management activities</li> <li>• Measures to prevent identified risks and negative impacts</li> </ul>
10.	Monitoring and evaluation	<ul style="list-style-type: none"> <li>• Monitoring objectives, indicators, procedures and responsibilities</li> <li>• Monitoring and evaluation intervals</li> <li>• Evaluation methods</li> <li>• Methods to be used to communicate monitoring and evaluation results</li> </ul>
11.	Approval and revision of the Management Plan	<ul style="list-style-type: none"> <li>• Approval procedure</li> <li>• Schedule outlining responsibilities for reviewing the Management Plan</li> </ul>
12.	Annexes	<ul style="list-style-type: none"> <li>• Documents / records that need to be annexed to the Management Plan</li> </ul>

# 1. Background

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## 1.1 Introduction

The introduction should include, *inter alia*, a brief description of the species in question and give an overview of the collection process, the need for and benefits of the Management Plan, any stakeholder consultations that took or should take place, and how the plan follows the ISSC-MAP's recommended structure.

## 1.2 Goals and objectives of the Management Plan

The provisions of the Management Plan should address clearly the stated goals and objectives. The context of the goals in terms of national legislation could be included here, as well as the anticipated outcome of the Management Plan.

### Comments and Suggestions

- Goals and objectives should be apparent after the current situation has been described and analysed (chapters 2 to 6).
- To establish realistic goals, it is important to consider limitations posed by the level of stakeholder support, economic realities, and environmental constraints. Because of limited resources, the Resource Management may be unable to address immediately all identified needs. If this is the case, prioritisation will be necessary. Goals that require a long-term approach should not be neglected in favour of those that can be achieved quickly.
- Compliance with ISSC-MAP requirements should be integrated into the management objectives. For example, achievement of the 6 ISSC-MAP principles can be included in the objectives.

# 2. The collection area

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- ***Rare, threatened, and endangered species and habitats that are likely to be affected by plant collection and management are identified and protected. [ISSC-MAP criterion 2.1]***
- ***Management activities supporting wild collection do not adversely affect ecosystem diversity, processes, and functions. [ISSC-MAP criterion 2.2]***

## 2.1 Description of the area

The area where wild collection is carried out needs to be clearly defined and its boundaries established. In order to fulfil this, this chapter should include information on:

- a) Geographic location (e.g. GPS coordinates), altitude and topography
- b) Size of the total area in ha or km<sup>2</sup>
- c) Exact identification of zones / sites of target plant occurrence and collection
- d) Average temperatures and climate
- e) Description of soil structure and characteristics
- f) Description of prevailing habitats and plant communities

### Collection zones:

These are the zones inside the collection area that are currently harvested by collectors; they do not necessarily correspond to the total range of the target species in the collection area. If optimum collection quantities are calculated based on the total size of the area, this may lead to over-harvesting in the portions (sub set of the total harvestable area) where collection is actually taking place.

## 2.2 Identification of sensitive species

All rare, endangered or threatened species (plants and animals) that can be found in the collection area need to be listed here (indicating their scientific, trade, international, national and local names).



**The valid up-to-date national red list(s) of rare, endangered or threatened species** should be available and consulted to find out, which species occur in or next to the defined collection area.

**A list of sensitive species** that are known from or likely to occur in the collection area should be developed, maintained and regularly updated.

If there is no up-to-date national list of threatened species, information on the occurrence of sensitive taxa in or near the collection area may be obtained from sub-national (e.g. provincial) environmental and conservation authorities, local nature conservation organizations, collectors, or researchers in universities.



The on-line global IUCN Red List of threatened species ([www.iucnredlist.org](http://www.iucnredlist.org)) should be consulted for listed species that occur in the collection area.

When drafting the management plan, authors should keep in mind that many potentially threatened species have not yet been assessed according to national and / or global criteria.

Once a national list of rare, endangered or threatened species in the country is available, the Resource Management should check if some of these species grow in the collection area. Collectors and other stakeholders may be asked for information about the species' occurrence within or next to the collection area.

## 2.3 Identification of protected or sensitive habitats

Information on protected or sensitive habitats and ecosystems should be provided in this chapter with reference to any pertinent legislation that precludes off-take of the target species within these areas.

### Comments and Suggestions

- To identify protected areas, follow the steps indicated in chapter 3 of this manual.
- Protected or sensitive habitats and ecosystems and related areas that need to be excluded from collection or that require extra precautions must be marked on the collection area maps (see 2.4 below).
- If there are issues surrounding look-alike species, these could be included in this section of the chapter.

## 2.4 Maps

Maps need to be available to indicate the location of all trails or roads, conservation areas and main infrastructure, settlements, farming areas, industrial zones, and collection areas at a scale that is useful for supervision of management activities and to facilitate onsite monitoring. All major sources of potential contamination must be indicated on the map and excluded from collection.



A set of maps should be available at each purchase station. Collection areas boundaries should be clearly marked, as well as obvious landmarks such as rivers, oadis, large trees, hills, houses or huts etc. Maps must be detailed enough to allow rapid identification of:

- All purchase centres and processing facilities
- All collection zones / sites
- All conservation areas (protected areas, areas with special management objectives or sites of cultural or religious significance to local people)
- All trails, roads and settlements
- All potential sources of contamination such as industrial zones, quarries, farming areas and waste deposits.

## 2.5 Sites not suitable for collection

Sources of known or potential contamination need to be identified and excluded from collection. A corresponding list must be available at each purchase station.

No prohibited inputs (according to relevant organic standards) may be used in the collection area.



### **Confirmation:**

A confirmation by the relevant authority, land owner or trustworthy expert statement that the collection area was not treated with prohibited inputs (as listed in the relevant organic regulation) during the previous three years should be available. Confirmations issued by the collection operation or related groups or individuals will not be accepted.

### Comments and Suggestions

- If more than one company or organization is collecting in the area, the collection sites of the different companies need to be clearly indicated (e.g. in different colours). Potential overlaps should be highlighted.
- A suitable distance of the collection area from major contamination sources needs to be defined, e.g. next to roads, rubbish dumps, home consumption fields, etc. Intensity and nature of contamination, main wind direction and topography should be taken into consideration. In case of doubt, analysis of soil or plant samples can be necessary and required by the ISSC-MAP consultant or certifier.
- Collectors should be trained to avoid collecting in prohibited collection sites, and consideration should be given to creating a list of unsuitable collection sites; this could be included in the Internal Collection Rules annexed to the collector contracts.

### 3. Social and institutional situation

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- *Collectors and managers have a clear and recognized right and authority to use and manage the target resources [ISSC-MAP criterion 3.1]*
- *Traditional use, access rights, and cultural heritage: Local communities and indigenous people with legal or customary tenure or use rights maintain control, to the extent necessary to protect their rights or resources, over collection operations [ISSC-MAP criterion 4.1]*
- *Benefit sharing: Agreements with local communities and indigenous people are based on appropriate and adequate knowledge of resource tenure, management requirements, and resource value [ISSC-MAP criterion 4.2]*
- *Transparency and participation: Collection activities are carried out in a transparent manner with respect to Management Planning and implementation, recording and sharing information, and involving stakeholders [ISSC-MAP criterion 5.3]*

#### 3.1 Ownership of the area and regulatory system

The ownership, tenure, and / or use rights of the collection area need to be known and should be fixed over a timescale that is long enough to fulfil the resource management objectives.

- **Ownership of the area:** Land can be under different forms of ownership, e.g. state (mostly public land; sometimes land owned by state or sub-state rulers), community, or private ownership. In some cases, land can be owned by families rather than communities or individuals. Some indigenous peoples do not acknowledge the concept of land ownership but have customary resource use rights. Land owners may delegate land and / or resource management responsibility to other persons, groups or agencies.
- **Identification of the Resource Management body:** Up-to-date documents identifying the responsible management body need to be consulted. This could be for example the land titles, a lease agreement, a resource management agreement, a collection permit or land registry records.
- **Regulatory system:** Description of the mechanisms that are being used to control the effective functioning of the regulatory system. A summary of the methods used to ensure protection of the collection area from illegal collection, human settlement and other unauthorized activities.

#### 3.2 Stakeholders and socio-economic context of collection

All stakeholders (e.g. collector groups, organizations, enterprises, individuals, state agencies, universities etc.), with an interest in using the target resource(s) or the collection area, or are likely to be affected by potential impacts of the collection operation, need to be identified and involved in the development and implementation of the Management Plan.

The socio-economic context of collectors and their families should be analysed and described. The analysis should include an overview of the sources of income, a description of collection practice and status of equity issues (gender; different religious or political affiliations; minority groups; etc.) and an overview of all forms of child labour in communities and collector families (including proposed remedial action or strategies where prohibited forms of child labour occur).

Comments and Suggestions

- If no collection permit system is in place, care must be taken to find out if more than one company collects the target species in the same area. In this case, all companies should be integrated into the collection operation and participate in the development, implementation and monitoring of management practices (e.g. through establishing a joint Management Committee or a species-specific working group that should work towards establishing a Code of Good Management and Collection Practice).

### 3.3 Traditional uses and customary rights in the collection area

Description of the traditional collection and use practices of the target species in the collection area. Identification of local communities and / or indigenous peoples with legal or customary tenure or use rights. In case where records exist of traditional use or access rights as well as concessions for using resources or sites inside the collection area, these records need to be made available to and respected by the Resource Management. The customary rights of local communities and indigenous peoples to manage collection areas and use the resources have to be recognized and respected.



Documentation of agreements and meetings with communities and traditional resource users.

Records of compensation payments and the development and implementation of access and benefit sharing mechanisms (ABS agreements or similar) need to be kept.

If applicable: An adapted guideline document on access and benefit sharing should be developed and annexed to the Management Plan.

#### Comments and Suggestions

To find out more about customary practices and rights, it may be useful to:

- Ask collectors about the activities of local or indigenous peoples in the collection area.
- Consult local resource authorities about traditional rights or concessions related to the collection area or target species.
- If the target species has been traditionally collected for local use in the area, the collection management should take this into account when developing collection guidelines. In order to determine the optimum sustainable yield and to assist with collection planning, the material collected for home use or local markets must be considered.
- A sufficient number of good quality plants must be made available to local communities. How this can be achieved should be described and included in the management activities.

If negative impacts on the rights of traditional users or local communities are identified (see chapter 9), measures need to be taken to mitigate or avoid these impacts. A process of fair compensation for the damage caused needs to be incorporated into the Management Plan, which should include participatory negotiation and consensus by the affected communities.

- ABS agreements must fulfil the following requirements:
  - comply with national / local legislation
  - be based on prior informed consent and mutually agreed terms
  - be based on adequate information regarding resource value
  - be adaptable in case of new knowledge and changing conditions

- The communities having the traditional knowledge related to the collected species have to be correctly and fully informed about the collection operation and the Management Plan and give their consent to the planned activities.

### 3.4 Other existing management systems and practices

The Management Plan needs to be synchronized with any existing management plan that refers to the collection area, such as protected area, forestry or other land or water management plans, local area development and management plans, or communal land user group management plans.

#### Comments and Suggestions

- The ISSC-MAP resource Management Plan should not override any existing rights and responsibilities of local people or any other management objectives but should strive to incorporate these into the Management Plan.
- In order to identify all traditional rights, responsibilities, protected areas and areas with special management systems, it can be useful to organize a workshop with collectors and other involved stakeholders (authorities, collection companies, etc.). Together, the main products from the collection area that are used can be identified (e.g. timber, firewood, grazing, fodder, wild collected plants), the main “services” of the area (e.g. water, biodiversity, wildlife, soil conservation, sites of cultural or religious significance, protected ecosystems) and the patterns of use rights can be described and documented.
- The Management Plan needs to be accessible on request.

## 4. The target species

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For each species, the information required in this chapter should be available. If several species are collected, this chapter can be copied as many times as necessary. Alternatively, the form “Plant specifications” should be completed (*annex I*) for each plant / plant part and annexed to the Management Plan.

- ***The conservation status of target species and populations is assessed and regularly reviewed [ISSC-MAP criterion 1.1]***
- ***Knowledge-based collection practices: Collection and management practices are based on adequate identification, inventory, assessment, and monitoring of the target species and collection impacts [ISSC-MAP criterion 1.2]***
- ***Market / buyer specifications: The sustainable collection and handling of plant resources is managed and planned according to market requirements in order to prevent or minimise the collection of products unlikely to be sold [ISSC-MAP criterion 6.3]***

### 4.1 Conservation status assessment

The conservation status of each species and its populations targeted for wild collection according to the ISSC-MAP requirements should be evaluated.

- Endangered (E) and critically endangered (CR) species must not be commercially collected.

- Target species evaluated and determined to be vulnerable (VU) or near threatened (NT) may be collected under the following conditions:
  - Threats affecting the species are accurately identified in chapter 9 and management strategies are defined and implemented to reduce threats
  - The species is not considered as E or CR using national-level criteria
  - The requirements of the ISSC-MAP for assessing and monitoring sustainable harvest levels are fully met (see chapters 5 and 10).

#### Comments and Suggestions

- For information on how to determine whether the conservation status of the target species has been evaluated according to the IUCN Red List categories and criteria or according to national or sub-national level criteria, please consult the ISSC-MAP Resource Assessment Guide.
- Collection should comply with all relevant regulations. Even if a plant is not on the IUCN Red List, protected species in the target country or region must not be collected or might only be collected if all local, national or international requirements for protection are fulfilled.
- Target species that do not appear on any of these lists may be threatened, but have not yet been assessed. Please consult the ISSC-MAP Resource Assessment Guide for information on how to perform an assessment to determine the local conservation of the resource.

## 4.2 Description of the species and collection methods

Knowledge of biological characteristics of the target species as well as appropriate sources of information should be available.



#### **Information about each collected plant:**

- Botanical (scientific) name
- Common local, national, international and trade names
- Distribution within the collection area and collection sites
- Habitat(s) of the plant
- Part(s) of the plant collected
- Collection period and frequency
- Collection method: For each plant / plant part a detailed description of the harvest methods should be available.

#### Comments and Suggestions

- If not the whole plant is collected, the Management Plan should indicate which percentage of the collected parts is harvested per plant (e.g. “30% of the flowers of each tree”) or another type of estimate (e.g. “the lowest limb of a 100 ft tall tree is pruned off”).
- A good way to provide all basic information about the plants to the collectors is the development of “**Plant Monographs**” for each collected plant. An example may be found in the Wild Collection Manual developed by GTZ, IMO and SIPPO (an example is provided in annex II). However, a Plant Monograph does not replace the Plant Specification Form, as conservation status and resource assessment information is missing, but complements it: the aim of Plant Monographs is to provide a tool for correct identification, collection and handling of the species and should be kept simple.

### 4.3 Uses of the collected plant / plant part

The uses of the collected plant part (including local use) should be described. This includes uses for all purposes (such as alimentary, medicinal, ritual, cosmetics, decorative etc.) and all markets (home consumption; local; provincial; national; international; global markets). If figures for the annual demand of each of the use types and markets are known, they should be provided.

### 4.4 Importance of the species for the collection operation and collector communities

The aim of this point is to assess how dependent the operation or the collector communities are on a single species. If collectors or communities depend on a single species to make their living, they are commercially vulnerable and fully dependent on market dynamics, which may enhance the risk of over-harvesting of the species. An evaluation of the economic importance of each collected species to the collection operation, the collectors and their families should be presented in this section.

### 4.5 Specific functions in the ecosystem

If the target species has a specific function in the ecosystem, it needs to be indicated here. Examples of such functions are:

- Symbiotic relation with other species
- Erosion control
- Flood control or influence on water balance in the area
- Influence on light regime (e.g. shadow plants) within the ecosystem
- Shelter, nesting ground or material or food for animals

Information on specific functions can be found by researching botanical studies of the species, or researched through communications with plant experts and from discussions with collectors and other local experts or environmental organizations.

### 4.6 Quality and market requirements for the collected products

If applicable (e.g. if the target species is / are collected for commercial purposes), the collection operation needs to identify market needs. The characteristics and qualities required on the market might depend on the end use of the product (e.g. a product intended for pharmaceutical use has different requirements than the same product used for the food industry). Conducting a market study or include regular market surveys into the Management Plan can be beneficial for the operation. The industry should submit and market survey reports to the organization responsible for the Management Plan.

Collection managers should request written product quality specifications from interested buyers. These should also include requirements for the fulfilment of specific standards and / or respective certifications (e.g. DIN, ISO, Pharmacopoeias, USP, organic standards or the buyer's own standard).

## 5. Resource Assessment Information

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- ***Collection and management practices are based on adequate identification, inventory, assessment, and monitoring of the target species and collection impacts [ISSC-MAP indicator 1.2]***

- ***The rate (intensity and frequency) of collection does not exceed the target species' ability to regenerate over the long term [ISSC-MAP indicator 1.3]***

In order to fulfil these ISSC-MAP requirements, baseline information needs to be available on target species' population size, distribution, and structure (age classes) in the collection area.

## 5.1 Assessment planning and methodology

Resource assessments vary in complexity depending on the size and complexity of the collection operation and on the assessment of the sustainability risk related to the collected species. They can be made by public (state) institutions, consultants, or trained company staff. However, it is important to ensure that the data collected is valid and reliable, since this information provides a basis for decisions made during later steps in the process. For information on resource assessment techniques, please refer to the ISSC-MAP Resource Assessment Guide.

## 5.2 Resource assessment data

Obtaining the following data should be included in the Management Plan (all required data can be taken from the resource assessment):

- Information on population size, distribution and structure
- Yield per ha in each area and periodicity of production (e.g. annual cycles)
- Availability, viability and quality of the target plant / plant part in the collection area
- Regeneration analysis of the target species
- Proportion and distribution of mature, reproducing plants that need to be left untouched
- Regional / site specific yield variations: climate, yield alternations
- Determination of safe removal rates (based on research trials and / or knowledge among local stakeholders, in combination with relevant, research-based literature if available).

## 5.3 Resource mapping (marking of growing locations in collection plots)

For many wild collected species that have a patchy distribution in the collection area, it is necessary to mark their distribution on a reasonably small-scale map.

### Resource mapping:



1. Marking on a large-scale map the location of the collection area(s).
2. Marking on a / several small-scale map(s) the locations where the target species is / are found within each collection area.
3. The Resource Assessment should provide all basic data. However, if there is any uncertainty with regard to exact locations, habitats should be revisited with the map at hand and all target species populations should be sketched in the map as accurately as possible.
4. The use of GPS can be beneficial. For each location, collectors or other local stakeholders should be asked if there is a local name of the site.
5. Each location should be discussed with the collectors and / or other local stakeholders. Comments from them can be documented in the **Resource Map Recording Format** (see

below). These comments could include the quantities harvested in previous years, changes in the availability of the plant / plant part, and problems noticed inside the collection area.

6. If possible, it is useful to indicate on the map those areas where the species is not found, but where it could potentially grow.

*Adapted from: COMMUNITY FORESTRY MANUAL FOR BHUTAN, Part II Community Forest Management Planning. 2004. Developed with the support of Wang Watershed Management Project (European Union), GTZ and SDC/Helvetas*

<b>Resource Map Recording Format for <i>Species A</i> (indicate scientific and local names)</b>			
Collection Area	Name / description of species' populations location (collection sites)	Approximate size of the species' population at this site (ha) / GPS or related coordinates if available	Comments

## 6. The collection operation

- ***Laws, regulations, and administrative requirements: Collection and management of resources complies with all international agreements and with national and local laws, regulations, and administrative requirements, including those related to protected species and areas [ISSC-MAP criterion 3.2]***
- ***Collection activities are carried out in a transparent manner with respect to Management Planning and implementation, recording and sharing information, and involving stakeholders [ISSC-MAP criterion 5.3]***

### 6.1 Description

In the introduction, the name(s) of the collection operation(s), the history and background of the collection operation(s) and collection activities of the target species in the area should be given. If there are several collection operations in the area, each of them needs to be described, including the species they collect. The collection locations of each operator need to be marked in a map.

### 6.2 Structure

Description of the structure of the collection operation(s): number of collectors in each area, number and location of purchase centres. Description of all processing (including storage) and trade steps and respective locations.

### 6.3 Legal status

The Management Plan and all collection activities need to work within the framework of existing regional, national, and / or supranational legislation.



**If collection permits or other documents** (e.g. export permits) are legally required for the use and management of the area or the species, they need to be available for each collection operation.



**Confirmation of use:** If there is no permit system, a confirmation from the relevant authority indicating that the collection area is legally free and available for wild collection management may be required.

### 6.4 Collectors

#### Collectors List

- Complete collector registers need to be available in order to ensure that all collectors are known, well-trained and aware of the collection rules.
- All collectors have a valid contract with the collection operation.
- Collector training is documented; collectors sign their participation in the training. Only fully registered and trained collectors are allowed to collect.



1. **Approved Collectors List:** At each purchase centre a complete list of all contracted collectors (including name, code number, and address) must be available for the respective collection area. Purchase is only allowed from the listed collectors.
2. A responsible person should be assigned for each collection area.

#### Comments and Suggestions

- For entire families who are active collectors, the registration and contracting of one family member who organizes family collection may be sufficient under two conditions: 1) the total number of family members collecting is known and indicated on the collectors list; 2) all collecting family members have participated in adequate collection training. The registered member of the family is responsible that all other family members collect in compliance with the Internal Collection Rules. The collection operation should develop a catalogue of sanctions in case of non-compliance of collectors or their families with these Rules. The catalogue of sanctions must be annexed to the collector contracts and made known to the collectors and their families.
- All collectors should have a unique code number to guarantee individual identification. To avoid confusion, if a collection contract is cancelled, the code should not be given to another collector.
- It is suggested that for all trained and contracted collectors a Collector's Card is introduced. This is a simple identification card with the name and photo of the collector, which proves that she / he was trained and is obliged to follow the Internal Collection Rules.

### 6.5 Responsibilities

Responsibilities within the collection operation must be clearly defined.

An organizational chart of the collection operation should be developed and included in the Management Plan, providing information on the person(s) and departments responsible for:

- the collection operation in each collection area
- each purchase centre
- handling, storage and processing unit(s)

- monitoring impacts on the collection area
- resource assessments, quality assurance and others as appropriate.

**Supervision body:** The collection operation should define who supervises the general management of the collection operation and the implementation of the procedures as defined by the Management Plan. If more than one company or collectors organization is involved in the collection operation, the role of the supervision body is particularly important. It may be useful to elect a supervision committee. For big and complex collection operations the certification body or ISSC-MAP consultant may request formal assignment to an external expert to supervise the wild collection operation.

## 7. Working plan

- **Collection activities are carried out in a transparent manner with respect to Management Planning and implementation, recording and sharing information, and involving stakeholders [ISSC-MAP criterion 5.3]**

### 7.1 Management procedures and responsibility matrix

The management procedures (including timelines and responsibilities) need to be agreed upon by all stakeholders who participate in the resource management process, and must be documented.

#### Management Procedures and Responsibilities Matrix:



1. Composition of a list of all Management Plan objectives (see example below).
2. Listing and detailed description of all activities required to achieve the objectives.
3. For each activity, priority indicators should be given, e.g. high (H), medium (M) or low (L).
4. Procedures and responsibilities should be listed for each activity. 'Procedure' means details about **how** an activity will be carried out (as detailed as necessary). Responsibility means **who** is supposed to carry it out and who is to ensure that procedures are followed.

*Adapted from: COMMUNITY FORESTRY MANUAL FOR BHUTAN, Part II Community Forest Management Planning. 2004. Developed with the support of Wang Watershed Management Project (European Union), GTZ and SDC/Helvetas*

Example of Management Procedures Matrix					
Objectives	Activities	Priority	Procedures	Responsibilities	Timeline
1. Ensuring a stable plant population	Definition of collection methods and quantities	H	1. Review of literature 2. Getting information from experienced collectors 3. Resource assessment	1. & 2. Collection operation manager in collaboration with collector's representative 3. Resource manager	01.01.201x
	Implementing new collection procedures	H	1. Defining Internal Collection Instructions  2. Training of collectors 3. Applying new collection methods	1. Collection operation manager and collectors representative. To be approved by resource manager 2. Collection operation manager 3. All collection companies / collectors	01.06.201x
	Monitoring of collection activities	H	1. Defining monitoring procedures and indicators 2. Regular surveys of collection area 3. Monitoring collectors (correct implementation of collection	1. & 2. Collection operation manager is responsible for establishing a monitoring procedure and for doing regular surveys in the area 3. Collection operation manager	15.12.201x

			procedures) 4. Reporting collection impacts	4. All collectors for monitoring and reporting collection impacts	
	Enrichment planting	L	1. Reproducing plants 2. Selection of planting sites 3. Planting	1, 2 & 3: To be carried out by collection companies under the supervision of the resource manager	30.02.201x 30.02.201x 31.08.201x
	Etc.	Etc.	Etc.	Etc.	Etc.

## 7.2 Management Planning and implementation schedule

Full planning and implementation of the management strategy can take some time, depending on the size and complexity of the operation and the availability of financial and personnel resources. A time / action schedule shows the steps involved and the time frame for completing tasks (see table above).



A long-term **working plan** should be established (in this chapter or as a separate document annexed to the Management Plan). All planning and implementation steps (including workshops, meetings, development of work procedures) and management activities (training, collection periods, rotation plan, monitoring schedule, revisions of the Management Plan) need to be included in the working plan. The required activities can be taken from the Management Procedure Matrix (chapter 7.1). The working plan must be revised at the end of each season and modified according to monitoring results and new information obtained.

Please note that it is not possible in all cases to fix a date for the achievement of all steps and procedures of the Management Plan at the beginning. Activities can be kept flexible and fixed later during one of the annual revisions.

### Comments and Suggestions

If the collection operation management decides that the first steps to be taken are the resource assessment and the definition of sustainable collection methods and quantities, these should be set for year 1. There may not be enough resources in place to begin monitoring already during the first year; monitoring procedures will therefore be planned in year 1 but fully implemented only in year 2. Some activities will be performed annually on a recurring basis, while others may be carried out continuously during the whole season, while others will have e.g. 3 years' intervals.

Progress checks should be included in the Management Planning schedule to ensure that delays or problems are detected and dealt with in time. The collection operation management can write an annual progress report, which should be sent to the ISSC-MAP consultant or supervisor. Additionally, external (third party) annual audits performed by an ISSC-MAP consultant or a certifier should be carried out.

## 7.3 Financial Planning

- ***Mechanisms are encouraged to ensure the financial viability of systems of sustainable wild collection [ISSC-MAP criterion 6.3]***

The sustainability of an ISSC-MAP managed project depends to a great extent on its financial viability. The revenues received from wild collection often have to cover the costs of the operation's management activities over the long term, including conservation investments required to meet the

ISSC-MAP Standard. For this reason, the operation's management needs careful financial planning, which is usually part of the business planning process. In some cases, especially when there is substantial involvement of state agencies, additional funds may be provided through this source. Personnel responsible for the financial planning must be identified. In case the project consists of a resource management institution (e.g. Forest Department) and one or several collection operations, the both the resource management, and the collection operation(s), should prepare a financial plan considering their own costs and revenues. For details about financial planning, expert knowledge is required. Detailed guidance on financial planning is outside the scope of this Management Plan Guide.

## 8. Internal instructions and procedures of the collection and marketing operation

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The responsibility of developing internal instructions and procedures (e.g. Internal Collection Rules or Standard Operational Procedures) lies with the collection management body. However, the resource management (if different) is responsible for supervising the procedures and guaranteeing that these are based on reliable data (resource assessment, optimum sustainable yield and other parameters).

- ***Procedures for collecting, managing, and sharing information required for effective collection management are established and carried out [ISSC-MAP criterion 5.4]***
- ***Collection and management practices are based on adequate identification, inventory, assessment, and monitoring of the target species and collection impacts [ISSC-MAP criterion 1.2]***
- ***The rate (intensity and frequency) of collection does not exceed the target species' ability to regenerate over the long term [ISSC-MAP criterion 1.3]***
- ***The sustainable collection and handling of resources is managed and planned according to market requirements in order to prevent or minimize the collection of products unlikely to be sold [ISSC-MAP criterion 6.1]***
- ***Storage and handling of resources is managed to support traceability to the collection area [ISSC-MAP criterion 6.2]***
- ***Training and capacity building: Resource managers and collectors have adequate skills (training, supervision, experience) to implement the provisions of the Management Plan, and to comply with the requirements of the ISSC-MAP Standard [ISSC-MAP criterion 6.4]***
- ***Worker safety and compensation: Collection management provides adequate work-related health, safety, and financial compensation to collectors and other workers [ISSC-MAP criterion 6.5]***

### 8.1 Internal Quality Standard

An internal quality standard should define, for each collected product, the minimum quality requirements. It needs to be based on the market and buyer requirements identified in chapter 4. If several different species are collected, the Quality Standard can be written as a separate document and annexed to the Management Plan.

## 8.2 Collection instructions and collector training

The collection instructions have to guarantee that:

- Wild collection is conducted at a scale and rate and in a manner that maintains populations and species over the long term (sustainability of wild collection).
- The collection does not damage other plants or habitats (e.g. through weakening natural erosion control).

Therefore written collection instructions need to include the following information:

1. Determination of target species and target plant part(s). Drawings and / or photographs of target species and potential look-alike species.
2. Determination of collection and harvesting rules in terms of:
  - Optimum collection quantities: Volume to be collected in total or from a single plant.
  - Periods to avoid and concentrate collection activities: When can the plant / plant part be collected (in which season, month, time of day, weather conditions)?
  - Target product quality: what types of plants/part of plants can be collected e.g. size, age, ripeness?
  - Collection methods: Which collection method can be used e.g. picking, cutting, breaking, uprooting? Techniques should be described and illustrated in a simple way.
  - Who collects (e.g. how many people per household, which households)? Reference to collectors list and contracts / written agreements.
  - Replanting or restocking. If required: description of the techniques to be used; supply of seedlings; times of re-planting.
3. Collection sites: locations (maps; local names), and their opening and closing times.
4. Collection plan: collection frequency, rotation plan, production per collection site.
5. Conservation sites (sites to be left untouched because they are protected or have special management objectives) that serve as control sites for monitoring activities.
6. Sites not suitable for collection: description and indication on maps of all areas excluded from collection, such as roadsides, rubbish dumps, fields where conventional farming is practiced; within and in the direct vicinity of settlements, at or near operational industrial production sites or known contamination areas of old, derelict industrial production sites, and others.
7. Observation of collection impacts:
  - What is the population development of the target species (increase; decrease; why)?
  - How much time does it take on average to collect amount x of produce y?
  - What changes in product quality / size can be observed?
  - What other changes have occurred in the area, e.g. are other species getting rare or more frequent (including animals), accumulation of waste, erosion, etc.
8. Further activities specific to the collection operation.



The internal collection rules should be written or at least summarized in simple words so that they can be easily understood by all relevant stakeholders. It is useful to work also with simple illustrations and pictures.

The internal collection rules are the basis for all internal procedures on the level of the collection and handling. They need to be available in each purchase centre and each collector must receive a copy and detailed explanations during the first training.

### Comments and Suggestions

- The percentage of plants / plant parts left untouched should be based on the results of the resource assessment and / or market demand and determined through research trials and / or knowledge among stakeholders, in combination with research-based literature if available.

- Collection quotas should be calculated based on sustainable harvest yields, population density in a collection area and market demand. Agreements should be made with the collectors on how much of which plant / plant part needs to be collected to avoid unsustainable harvesting practice.
- Only collected material that meets the Internal Quality Standard should be accepted by the collection operation. Plants which do not meet the quality requirements are left untouched or, if already collected, rejected at the purchase centres.

Collector training should include the following aspects:

- The collectors need to be trained in the internal collection instructions regularly before collection starts. The collection instructions should be available for all collectors at any time at least in the purchase stations. The same applies for the maps of the collection areas.
- Collectors' registers should be available in order to make sure that all collectors are well-trained and know the rules for collection.
- All purchase and company staff should be trained in the internal collection instructions and purchase, storage and processing procedures when beginning to work with the operation.
- Collectors and staff responsible for resource surveys and monitoring should be additionally trained in monitoring procedures (the resource management should supervise the training).
- Date and content of the training should be documented for each collector and staff member.
- The operation should ensure compliance with internal procedures and needs to have a system of sanctions for collectors and staff who do not comply.
- For all new plant species the collectors need to be informed and re-trained.

### **8.3 Handling by collectors**

In cases where collectors dry and store products at their homes, handling instructions need to be included in the Internal Collection Rules (Internal Collection and Handling / Processing Rules). These should describe how the products should be handled post harvesting (nature of transport containers; drying conditions and locations etc.) in order to prevent quality loss or product contamination.

#### Comments and Suggestions

- It is recommended that the collection operation provides the collectors with the needed post-harvest equipment in order to achieve the intended quality and to minimize the risk of contamination (e.g. contamination during drying on chemically-treated wooden trays).
- The collection operation should distribute clean bags to the collectors to make sure that they do not use contaminated materials (e.g. old fertilizer bags; bags for non-organic products; etc.)
- If drying and storage takes place at the collectors' homes, the relevant locations should be accessible for spot inspections by the collection supervisor, the ISSC-MAP consultant and/or certification body.

### **8.4 Purchase procedures**

- The purchase records need to provide proof of compliance with the ISSC-MAP requirements:
  - Only registered and trained collectors are allowed to collect. It has to be checked if the delivering collector is listed on the Approved Collectors List. Quantities delivered must correspond to the quantities the collector and family members registered under the

collector's name can collect within a given period. Collectors must know that they are not allowed to purchase material from other collectors and sell it to the collection operation.

- Records and proper identification allow each batch of goods to be traced back to the area where it was collected.
  - Payment of collectors must be at least equal to the current local price, must be equitable for men and women and must be registered at the purchase centre. Receipts are issued.
  - Collection quantities, periods and frequency of collection are recorded and confirm compliance with collection instructions.
  - Consolidated data on collected quantities are available (species / area / year) and confirm compliance with collection instructions.
- The purchased quantities allow evaluation of the amount of material being harvested from a defined collection area. These figures must be sent to the supervisor and to the certification body (if the operation is certified) automatically at the end of the season.
  - During purchase, the quality of incoming goods is controlled; material that does not fulfil the quality requirements is rejected.



1. At every purchase centre a **purchase register** has to be kept. Date, quantity, collector, payment (price), collection area, product, processing state (fresh, dried) need to be documented for each purchase (see example in annex IV).



2. The purchase centre issues a receipt to the collectors, which indicates the purchased product, quantity, payment and name of the collector; collectors must retain these receipts.



3. If incoming goods are not in compliance with the quality requirements or if it is suspected that the collector does not comply with the Internal Collection Rules, the products must be refused. This should be documented (reason of complaint, concerned collector, date etc).



4. From the purchase onwards all bags and containers must be labelled at all times (collection area, harvest year, product and lot number (if applicable) – if certified: certified quality).



5. If the purchase centre is independent, it must be contracted by the collection operation.



6. At the end of the year each purchase station should send the consolidated purchase quantities for each product to the supervisor and, if applicable, to the certification body.



7. Purchase procedures should be written down and known to all personnel. They should be placed in the purchase centre for everyone to see.

## 8.5 Storage, processing and handling procedures

The following storage, processing and handling requirements should be ensured and included in the Management Plan:

- a. All processing steps should be described and illustrated in the Management Plan in a flow chart, including processing ratios.
- b. Processing instructions reflecting client requirements and good handling procedures.
- c. Identification (labelling) of the product during all stages of product flow with product name, lot number, and certified quality, if applicable. Collection operations are advised to install a system of traceability by lot-numbers, which enables the product to be traced back to its origin. Whenever smaller lots are consolidated into bigger processing lots, this should be carefully documented.
- d. Strict separation (physical and in documentation) of different certified qualities (ISSC-MAP, non-ISSC-MAP) and if products from other sources (not ISSC-MAP managed) are purchased.

- e. Internal handling instructions that describe the procedures for correct handling after purchase from the collectors and during transport in order to minimize contamination / deterioration of quality. The processing and handling instructions should be accessible to and visible for all staff.

Additionally, the following records should be kept by the operation:



**Transport records and / or transport documents** from the collection area or purchase centre to the processing and trading / export unit.



**Processing records:** All processing steps should be documented and allow a follow-up of the product flow from incoming raw ingredients to final products (see example in annex V).



**Stock records:** Stock records should include following information: Product type / name, certified quality, lot number, weight or quantity.



**Facility pest management:**

Synthetic products may only be used when the storage facility is empty and must be documented. The waiting period until the storage facility is used again has to be adequate.

## 8.6 Contracts

Each collector should confirm by written contract or agreement with the collection operation that her / his activities comply with the internal collection and handling instructions. The contract or agreement has to include at least the following points:



1. **Collection instructions:** The collector has to agree to comply with the collection instructions defined by the operation. A summary of the collection instructions should be included in or annexed to the contract.
2. **Access:** The collector agrees to grant access to all his / her facilities used for collected products (drying, storage, etc) and to provide information about the collection areas to the ISSC-MAP supervisor and / or certification body.
3. **Sanctions:** The collector agrees to accept the sanctions set by the purchasing company in case the collector breaches the agreement.



If collectors do not understand all the written provisions of the contract, the operation must explain them to the collector. Thumbprints instead of signatures are acceptable.



**Employed workers and company staff** must also sign a contract confirming that they will comply with internal instructions and procedures. Additionally, these contracts should provide proof that standard working rights and conditions with regard to benefits such as health, retirement, worker's compensation, food and housing are implemented.



If workers and employees of the collection company do not want to sign contracts, and if this is not legally obligatory, they and the collection operation must sign **terms of employment or an agreement**, in which the internal instructions and procedures and compliance obligations are described and working rights and conditions mentioned. Payment records must be kept for employed workers as described for individual collectors (see section 8.4).



Accident and sickness records need to be kept, as well as any other relevant record providing proof that social benefit requirements are met.

## 8.7 Marketing: product demand and marketing records

The collection operation should agree in writing with the buyers on quantities of collected resources (e.g. how much of which plant / plant part) before the collection season starts. Only the requested quantities are collected and; no plants are collected without a chance of being sold. This is especially important for plants which cannot be stored for a long period of time.



1. **Sales records:** All sales must be recorded. The entire product flow (incoming and outgoing goods) needs to be transparent and traceable.



2. The **original invoices / receipts** must be kept. The certification status and quality of the products need to be mentioned on all sales documents.



3. If **export permits** or other documents are required for marketing the collected species (e.g. CITES Appendix II species) or are legally necessary in the source or import country, they need to be available for each lot.



4. **Agreements with buyers** on quantities and product quality should be documented.

### Comments and Suggestions

- For species with a high or constant demand on the market (i.e. all collected quantities in previous years have been sold without problems), or that can be stored for a long period of time without quality loss, the demand for the next season may be estimated on previous experiences and collected before having a definitive agreement on quantities.
- For non-abundant species with low or irregular demand, agreements with buyers must be established before collection.

## 9. Risk / Impact assessment and prevention strategies

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*This step of the Management Planning process is relevant for achieving a large number of the ISSC-MAP criteria.*

An important aspect in the Management Planning process is the identification of all potential risks. Each project will face potentially relevant impacts that could threaten the sustainability of collection, the quality of the product, or the successful implementation of the Management Plan. In particular, all negative environmental and social impacts of management activities should be thoroughly identified and monitored. A first risk assessment should be carried out at the beginning of the Management Planning process, so that all identified risks can be considered when establishing management and collection protocols. This procedure should be repeated regularly each year. Once the risks have been recognized, appropriate management strategies can be formulated to prevent or minimize them.

### 9.1 Risk assessment

Risks can be grouped into 4 categories. Each of these categories should be analysed in separate subchapters of the Management Plan:

## Sustainability risks

The risk level depends on several factors, such as:

a) Factors related to the species

- Part of plant collected (e.g. roots or fruits)
- Frequency and intensity of collection
- Reproductive and regeneration capacity of the plant after collection
- Species distribution and population structure
- Habitat specifics
- Demand on the market / price level for produce
- Conservation status of the species

b) Project and site-specific factors

- Size and complexity of the collection
- Existence of other sources of income for collectors
- Level of collectors' knowledge in sustainable collection methods
- Regulatory system in place controlling the use of the collection area versus open, uncontrolled collection. Efficacy of the regulatory system.

## Risk for the habitats

- Potential damage to the habitats or to other species due to collection or management activities or due to other activities in the collection area(s). Examples: risk of erosion in case of collection of roots or whole plants, damage to trees, risk of forest fires or waste deposits in cases where collectors camp on the area during the collection season.
- Assessment if the plant collected is important for the survival of other species or has specific ecosystem functions (such as food or shelter for animals, land stabilization, erosion control).

## Social / institutional risks

- Level of stakeholder participation and interest to participate in the Management Planning. Potential conflicts between stakeholders (e.g. ethnic tensions; gender issues; economic differences between collector groups; dominance of certain collector groups; different interests between collector groups, etc.).
- Traditional use or use rights in the area; potential or already effective Intellectual Property Right claims, Access and Benefit Sharing agreements. Analysis of potential impact of commercial collection on traditional use and access rights of local communities. Level of participation and / or ownership of the collection operation among local and / or indigenous communities.

## Contamination / quality risks

- Intensive / conventional farming or timber extraction areas, villages, industries, mines, dump sites, roads or governmental / private spraying or other pest-fighting activities in the region.
- Appropriateness of current / traditional collection and handling methods to ensure product quality according to market requirements.
- Quality control performed during purchase procedure.

### Risk assessment



Thorough assessment and completion of the Risk Assessment Form (annex VI) is recommended for each species; the risk assessment should always be kept up to date as an annex to the Management Plan. Revisions of the risk assessment should be performed regularly; the intervals between risk assessments should be defined in the Management Plan.

Main results of each section of the risk assessment should be commented and analysed in the Management Plan.

## Comments and Suggestions

- The above listed aspects are some examples of potential common risks, but they are not exhaustive; each operation (maybe in cooperation with the responsible state agency) will have to identify individually the potential risks relevant to its own situation. This can be done by completing the Risk Assessment Form in annex VI or developing and completing a comparable document. Risk assessment documentation should always be adapted to the situation found in each collection area.
- Even experienced operations or management agencies need to **update the risk assessment regularly** to find out if parameters or situations have changed.
- Any problem encountered during previous years should be considered and included in the risk assessment as a potential risk unless there is proof that it has been eliminated permanently.

## 9.2 Identification of management impacts

All possible effects (positive or negative) of management activities on the sustainability of the collected species, on other species, on the habitat of the area or on traditional use, access rights and cultural heritage in the collection area need to be identified.

Where sensitive species or areas have been identified in the Management Plan, the impact of collection and management activities should be evaluated with special attention.

This step should be carried out at the end of the Management Planning process, but before the plan is finalized so that all proposed activities can be included and assessed.



### Identification of impacts

1. Preparation of an Impact Assessment Chart (see below). This should be prepared in advance of a meeting with all stakeholders or members of a resource management committee. The chart should be adapted to the situation of the collection operation and the Management Plan.
2. The assessment can begin by listing the activities proposed for the Management Plan down the left hand side of the chart. The information on activities should be copied from the Procedures and Responsibilities Matrix.
3. For each of the activities, the potential environmental and socio-economic factors are listed along the top row. For each of these, all stakeholders should determine if the proposed activity will have a positive, negative, or no impact. Positive impacts are indicated by '+', negative impacts by '-', and no impacts by '0'. The number of plusses or minuses should give an idea how strong the potential effect is.
4. If there are sensitive species or protected areas inside the management area, the effects of management and collection activities on each of them needs to be evaluated with special attention and detail. Rating grades may be useful.
5. The Impact Assessment Chart should be included in or annexed to the Management Plan.

*Adapted from: COMMUNITY FORESTRY MANUAL FOR BHUTAN, Part II Community Forest Management Planning. 2004. Developed with the support of Wang Watershed Management Project (European Union), GTZ and SDC/Helvetas*

Example of a completed Impact Assessment Chart		
	Potential environmental impacts	Potential impacts on local communities

Activity proposed in the Management Plan	Target species	Other plant species	Wild animals	Soil, water, sensitive areas	Traditional use of target species	Traditional access rights	Cultural values	Local employment
Commercial collection of liquorice roots	-	+	0	--	0 (no trad. Users)	0	0	++
Enrichment planting	++	-	0	+	0	0	0	+
Processing activities (using local wood for drying facility)	0	-	--	--	0	0	0	+
Etc.								

Positive effect shown by + / ++; Negative effect shown by - / --; No effect (or not relevant) shown by 0

For more detailed guidance on how to assess collection impacts on the target species, please refer to the ISSC-MAP Resource Assessment Guide.

### 9.3 Strategies and measures to prevent or minimize risks and negative impacts

- The Management Plan needs to include strategies to prevent or reduce negative impacts on other species and the collection area.
- Measures should be taken to avoid loss or damage of traditional rights, resources, health security or livelihoods of collectors and their families, local communities and / or indigenous peoples.

#### Strategies to prevent or minimize identified risks

For each section of the risk assessment in annex VI, the procedures that will be taken to avoid or reduce the identified risks should be described. These procedures should become part of the Management Plan and the collection operations' internal work procedures.

#### Strategies to prevent or minimize negative management impacts

Each management activity which has one or two minus ratings in the Impact Assessment Chart should be listed and analysed.

For each activity, procedures that will be taken to avoid or reduce the impact during implementation should be defined and elaborated. These procedures should then become part of the Management Plan.

Example of procedures to address potential negative impacts	
Activities	Strategies and measures
Commercial collection of liquorice roots	<ul style="list-style-type: none"> <li>- Only 20% of the adult plant population (at least 3 years old) according to the resource assessment will be collected.</li> <li>- A plot rotation system will be implemented; each plot will be visited by collectors once every 3 years.</li> <li>- No collection on areas with steep slopes in order to avoid erosion.</li> </ul>
Enrichment planting	<ul style="list-style-type: none"> <li>- Very restricted enrichment planting to minimize impact on other local plant species</li> <li>- Monitoring of plant diversity will be especially rigorous in areas with enrichment planting. Conservation sites will be established; each year the plant diversity at the collection plots will be monitored against conservation sites.</li> </ul>

## 10. Monitoring and Evaluation

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- ***Inventory, assessment, and monitoring: Management of wild collection is supported by adequate and practical resource inventory, assessment, and monitoring of collection impacts [ISSC-MAP criterion 5.2]***

This chapter should include all procedures necessary to achieve the above mentioned ISSC-MAP criterion by fulfilling the following indicators:

- Assessment and regular monitoring of the target resources and habitats, as well as of social / cultural and economic issues related to plant collection should be performed, documented, and incorporated into the Management Plan [ISSC-MAP indicator 5.2.1]
- Collection instructions specify observations required to monitor collection impacts [ISSC-MAP indicator 5.2.2]
- Periodic regeneration surveys need to be conducted within the management area using repeatable, comparable survey methods [ISSC-MAP indicator 5.2.3]
- Monitoring and regeneration surveys confirm that
  - Plant population size, distribution and structure remain stable or improve and reflect a healthy population [ISSC-MAP indicator 5.2.4]
  - Availability, viability and quality of the target resource / part of plant remain stable or increase [ISSC-MAP indicator 5.2.5]

Monitoring is used to verify if objectives and targets of the Management Plan are being achieved, to survey changes in sensitive aspects (as identified in chapter 9), to identify new issues and potential impacts, and - as a feedback mechanism - to modify and improve management practices (e.g. through changes in operational activities and procedures).

Monitoring should be carried out on a regular basis. A monitoring system needs to identify what will be monitored in the area, how it will be done and who is responsible for monitoring. Some key aspects for designing and implementing efficient monitoring procedures include:

- Clearly defined monitoring objectives and indicators
- Actions that address long- and short-term concerns
- Specific statements about how data will be used
- A clearly defined monitoring plan
- Definition of responsibilities

The Management Plan should define the rigour needed to meet ISSC-MAP monitoring requirements and responsibilities. The main options are: professional external monitoring, or participatory (collector / community) monitoring. These options imply different levels of precision, cost, and complexity. If the costs of a highly rigorous approach are unaffordable, implementation is unlikely to happen. On the other hand, there is little management value in collecting anecdotal data (for details see ISSC-MAP Resource Assessment Guide, Leaman and Cunningham, 2008).

## 10.1 Monitoring objectives and indicators

### Definitions:

- **Indicator:** used to measure if resource, social and other management conditions are changing because of collection procedures or other management activities (see annex VII).
- **Monitoring:** systematic observation of indicators to assess changes and evaluate if desired conditions are being attained.



### How to define monitoring objectives and indicators:

1. To define monitoring objectives, a list of all the management objectives that have been included in the Management Plan and of all potentially negative impacts that have been identified in chapter 9 (sensitive environmental and social issues) should be created.
2. Two or three indicators should be identified for each monitoring objective. For example: If the management objective is “To conserve biodiversity”, indicators may include the population or density of certain plant or animal species in the collection area. If a sensitive issue identified was the availability of products for local users, indicators may include the availability, quality and prices of the target products on the local market.
3. A short list of indicators should be developed, which will be monitored throughout the entire duration of the Management Plan’s validity.
4. The list of monitoring objectives and indicators should be included in this chapter of the Management Plan.

*Adapted from: COMMUNITY FORESTRY MANUAL FOR BHUTAN, Part II Community Forest Management Planning. 2004. Developed with the support of Wang Watershed Management Project (European Union), GTZ and SDC/Helvetas*

### Examples of possible indicators

- Regeneration status of perennial species
- Numbers and diameters or age/size classes of different species (including sensitive / protected species even if not collected)
- Degree of soil erosion
- Structure and density of populations of plant or animal species that may be sensitive to environmental disturbance (if sensitive / dependent species have been identified)
- Frequency of fires
- Evidence of illicit collection activities

## 10.2 Management Plan monitoring procedures and responsibilities

To ensure that changes detected by monitoring are actually occurring in practice and not simply a result of measurement inaccuracies or discrepancies (e.g. taken by different people or in slightly different ways), detailed and exact monitoring protocols should be developed and implemented. Monitoring protocols are specific instructions on how to measure each indicator.



### Establishing monitoring procedures

1. The procedures for measuring and recording each indicator should be discussed with the management committee, with collectors and / or the monitoring staff.
  - a. **Where** will information on the indicator be collected?
  - b. **How** will the information be collected?
  - c. **How often** will the indicator be monitored?
  - d. **Who will be responsible** for the monitoring of this indicator?
  - e. **How will** the people who collect the information be trained?

f. **How will** collected information be recorded for comparability and easy access?

2. Detailed monitoring procedures need to be described in this chapter or annexed to the Management Plan.

3. For each agreed monitoring indicator, the approach including the responsibilities and timelines should be documented and included in the Management Plan.

4. A table summarizing the monitoring objectives, indicators, procedures and responsibilities as shown below should provide an overview of monitoring activities.

*Adapted from: COMMUNITY FORESTRY MANUAL FOR BHUTAN, Part II Community Forest Management Planning. 2004. Developed with the support of Wang Watershed Management Project (European Union), GTZ and SDC/Helvetas*



**Monitoring records** need to be maintained indicating the date of monitoring, indicator monitored, location, responsible person who has performed the monitoring, monitoring results (measure or result of the target indicator) and comments.



**Monitoring report:** An inventory or a monitoring form can be designed that is used in the field to collect data. This form can be filled in by the monitoring staff, including all relevant information about the monitoring activity (see monitoring record), revision date and signature of the responsible manager or supervisor confirming that notice has been taken of the report.

#### Comments and Suggestions:

##### Monitoring locations:

- Some of the monitoring indicators involve collecting information from the entire collection area, such as evidence of illicit collection activities, frequency of fires, etc. Other indicators are measured through the review of records (e.g. total collected quantities) or interviews (e.g. availability of products on the local market).
- In many cases it may not be practical to collect information from the entire collection area by, for example, performing a complete census of a plant population. Nevertheless, it is still possible to obtain reliable information on the overall population by collecting data from a representative sample or monitoring plot. Selecting monitoring plots is a way to choose representative plots or locations and extrapolate the results to the collection area. There are two approaches to select monitoring plots depending on the monitoring objectives:
  - Monitoring of areas where collection activities tend to concentrate (more accessible zones e.g. near villages or roads or other intensive collection locations). The objective of choosing these sites is the early detection of over-harvesting or other impacts of collection activities on the habitat. It is also useful to monitor specific management efforts such as reduction of waste disposal by collectors.
  - Random sampling across the entire collection area. The goal is to characterize the overall condition of the collection area and to determine the general extent of management impacts in order to detect more widespread changes.
- The monitoring plots for measuring indicators on species population and habitat changes caused by collection activities should be selected inside areas where collection is normally performed.

##### Monitoring methods:

- In order to establish consistent monitoring methods, clear procedures need to be defined on how each of the indicators will be measured. The monitoring methods should be written in the form of instructions, with step-by-step procedures.
- **Regeneration surveys** should be performed on a regular basis. These surveys monitor changes in population size and structure. They also provide information about the impact of harvesting on

the long-term productivity and quality of the target resource (see ISSC-MAP Resource Assessment Guide for more information on performing regeneration surveys).

- For most indicators, monitoring refers back to the **baseline level** determined by the resource assessment.
- Some indicators may fluctuate from year to year according to changing local conditions (e.g. climatic variations), and a comparison with a control site may be necessary. **Conservation sites** should be established, which need to have conditions (species diversity and population, availability of target species, overall geographic conditions) similar to the collection sites and therefore serve as a control against which change can be measured. It is important that conservation sites are marked on the maps and left untouched by collectors (this has to be part of collectors training and also needs to be monitored).
- A monitoring schedule should be fixed summarizing at what time and in which years the different monitoring activities will be performed. This schedule should be part of the working plan for the implementers of the Management Plan (see chapter 7).
- Responsibilities: The persons in charge of monitoring measurements and of taking action in case of negative or unexpected monitoring results must be named and their roles and responsibilities must be clearly defined to make sure their responsibility is understood.
- Collector instructions: Collectors are also responsible for monitoring changes related to their collection areas or collected species. Instructions on the responsibilities, methods and frequency of monitoring and reporting must be included in the Internal Collection Instructions (chapter 8.2 of this manual).
- Equipment / training needs: Assessment of equipment or capacities necessary for monitoring. Depending on the complexity of the monitoring (which will depend on factors like size of the operation, target species, etc.) it can be necessary to assign monitoring to an external expert or specifically train one person within the collection operation in order to be able to perform sufficiently detailed regeneration surveys and resource assessments. For more information concerning the degree of rigour needed to meet ISSC-MAP requirements (and compliance levels for ISSC-MAP), please refer to the ISSC-MAP Resource Assessment Guide. Appropriate courses, manuals, and other training materials should be developed.
- Monitoring records and report: If the monitoring reports filled in by the monitoring staff on the field allow a full overview of all monitoring activities, no additional monitoring records are needed.

To collect the target species according	Collected quantities of each collection	From company records	Collection companies	A monitoring team will be formed and
<b>Objective</b> To guarantee the collection quantities	<b>Indicator</b> Evidence of illicit	<b>How it will be monitored</b> Annual reports from collectors and	<b>Responsibility</b> Collection	<b>Comments</b> the resource manager.
To guarantee the maintenance of the target species	<b>Regeneration activities</b> Attendance and Population surveys regularity of meetings; decision making pattern	<b>Monitoring staff</b> Number of seedlings will be counted each year in a fixed area (monitoring plot) Records and minutes of stakeholder meetings Number and age classes of individuals in monitoring plots will be recorded every second year and compared with baseline level.	<b>Management and monitoring team</b> organize Management Management committee will organize	<b>Forest Department</b> Forest Department will give support
To involve all population size, stakeholders in distribution and decision making structure	Resource assessments	A resource assessment will be repeated every 10 years	Forest Department	

### 10.3 Targets and management actions

Targets are measurable objectives which describe the conditions managers feel can be achieved over a reasonable time period (e.g. 5 years). Targets describe the maximum amount of change (measured against baseline levels or conservation sites) that is considered acceptable for the selected indicators. The aim of setting targets is to ensure that information collected on an indicator leads to management action and is used in decision-making.

If monitoring finds conditions to be below the target, corrective management actions will need to be identified and included in the Management Plan (see chapter 11).

## 11. Approval and Revision of the Management Plan

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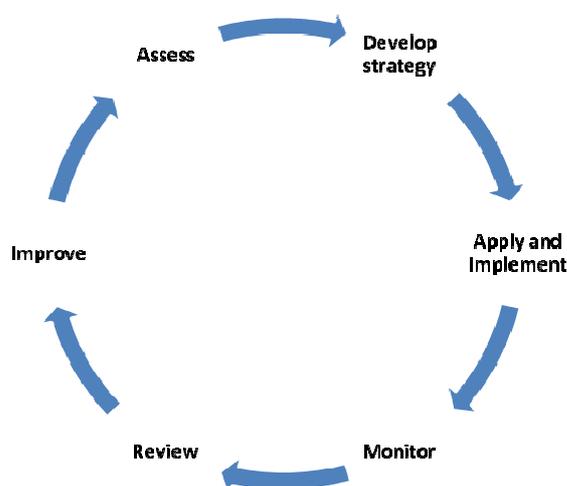
### 11.1 Approval procedure

In order to ensure that everyone involved in the Management Planning process understands and accepts the final plan, an approval procedure should be established. A meeting with all stakeholders and members of the management committee should be organized, in which a representative of each organization or group (authorities, resource management, collection operations, local users, etc.) officially accepts the Management Plan as well as the roles and responsibilities assigned, by signing an approval sheet. This approval sheet should be annexed to the Management Plan.

### 11.2 Regular revisions and further development of the Management Plan

Regular revisions of the Management Plan are an essential component of an adaptive management process. These revisions have to take place in order to evaluate if the management objectives were reached and if the internal procedures and management activities are adequate and effective. If monitoring indicates that performance is not in line with the management objectives, corrective management action needs to be taken and integrated into the Management Plan, for example modifying internal procedures, adapting collection quantities, enhancing stakeholder support, or organizing awareness-building workshops.

It is important to assess the success of the corrective management actions and indicators put in place. A feedback loop should be established between the information collected via monitoring, and the success of actions put in place to improve performance where targets are not being met (see figure below).



## 12. Annexes to the Management Plan

<b>Minimum annexes to the Management Plan:</b>
Maps showing collection area and main infrastructure, roads, conservation areas, settlements, farming areas, purchase centres etc.
Documents identifying tenure rights and resource management agreements (e.g. land titles, lease agreements, resource management agreement or land registry records).
Official confirmation from regional forest office or similar (land owner, responsible manager) of no-use of prohibited inputs on the area.
Documented regulatory system of the area / policy from the responsible manager or authority / owner
Collection permits or confirmations of use
National / provincial / local lists of protected species known from or likely to be found in the collection area
Complete list of collectors (including number of helping family members, if any)
Contracts / agreements with collectors, workers, buyers etc.
Internal Collection Instructions
Conservation status assessment of the target species
Plant specification forms / plant monographs
National legislation / regulations related to collection of wild species and use of natural resources
Resource assessment compilation sheets and other resource assessment documentation
Instructions / product specifications from buyers (quantity and quality specifications)
Market survey(s)
Internal Quality Standard (if not already included in the Management Plan)
Table identifying Traditional Rights, Responsibilities & Management Systems (if not already included in the Management Plan)
Consultation agenda with local stakeholders
ABS agreements, if applicable
Records of meetings with contracting parties and other stakeholders
Risk assessment / analysis
Impact Assessment Chart (if not already included in the Management Plan)
Procedures chart to address potential negative impacts (if not already included in the Management Plan)
Working Plan (if not already included in the Management Plan)
Monitoring procedures (if not already included in the Management Plan)
Monitoring report form
Templates for annual record keeping (purchase, transport, processing, stock and sales records training records and records on quality control)

<b>Additional annexes if applicable:</b>
Approval sheet
National local lists or maps of protected areas within, overlapping with or adjacent to the collection area
Reports on other activities in the area
Export permits (e.g. CITES Appendix II species)
Documentation on traditional uses of the species and the collection area as well as on cultural and religious significance
Documented agreements with source community / local peoples on the use of the area, collection of species and/or use of traditional knowledge: <ul style="list-style-type: none"> <li>• Financial arrangements</li> <li>• Conflict resolution</li> <li>• Benefit sharing procedures (equity)</li> </ul>
Records, reports or other evidence reflecting the resource value (in case of agreements with source community/ local peoples)
Evidence of communication with and involvement of traditional users and local stakeholders, for example: <ul style="list-style-type: none"> <li>• Early notification / opportunity for involvement</li> <li>• Definition of roles and responsibilities</li> <li>• Facilitation of participation</li> <li>• Records, plans, schedules of meetings with contracting parties and other stakeholders</li> <li>• Records of decisions taken as a result of such consultations</li> </ul>
Records of compensation payments
Any other legally required permit or document
Other records, reports or documents according to each operation.

# Part D: Annexes

## Annex I: Plant Specification Form

*(This form must be filled in for each plant. Alternatively the company may include this information in the Management Plan (e.g. in cases where a small number of species is being collected) or present similar internal documents in which the requested information is available for each plant. For information on how to fill in this form, please refer to the ISSC-MAP Management Plan Guidance Manual, chapter 4.)*

<b>Company:</b>	<b>Scientific name:</b>
<b>1. Plant (local / national / international / trade) name(s)</b>	
Please describe the reproduction system of the species (vegetative propagation or by seeds; pollination by wind, by insects or others; means of dispersal (wind, water, birds, other animals), etc.).	
Current conservation status of target MAP species according to the IUCN Red List categories and criteria	
<b>2. Description of the habitat (Where exactly inside the collection area is this plant collected?)</b>	
In which of the collection areas can this plant be collected?	
Habitat	
Altitude:	
<b>3. Collected plant parts</b>	
Collected parts: PART A) PART B) PART C)	Preferred age or size-classes for each collected part: PART A) PART B) PART C)
<b>4. Uses of the plant and market/buyer specifications</b>	
What are the uses of the collected plant / part of plant? For which uses is it being collected?	PART A) PART B) PART C)
Does the buyer have written quality specification requirements for this plant? If so, what quality standard for this plant/part of plant is specified (e.g. DIN, ISO, PhEur, USP, or buyers' own standard)?	PART A) PART B) PART C)
<b>5. Resource assessment and sustainability of collection</b>	
Yield in this area per ha (if necessary different estimations for different areas) according to the resource assessment	PART A) PART B) PART C)
% of total plant population which is harvested / from which parts are being harvested in the collection area	
How can regeneration of this plant be ensured? Are plant populations stable?	

Rate of replacement of adult individuals or plant part collected <sup>1</sup> (1 year (annual plants), 2 years, etc.):	PART A) PART B) PART C)
<b>6. How is the harvesting done and which tools are being used?</b>	
PLANT PART A)	
PLANT PART B)	
PLANT PART C)	
If not the whole plant is collected, which % (or other type of measurement) of collected parts is harvested per plant? <sup>2</sup>	
<b>7. Collection period</b>	
PART A) PART B) PART C)	
<b>8. Typical frequency of collection at one location (e.g. once a year, every second year)</b>	
PART A) PART B) PART C)	
<b>9. Average quantity collected per day per collector. Is collection daily during collection period?</b>	
PART A) PART B) PART C)	
<b>10. Importance of the species for the collection operation and collectors' community</b>	
To what extent do collectors depend on the collection of the species (for both local use and as source of income)? What other sources of income do the collectors have?	
How important is the collected species for the collection operation? (approximate % of total turnover of the collection operation)	
<b>11. Special functions in the ecosystem</b>	
Does the collected plant or part of plant have any special functions in the ecosystem? For example, symbiotic relations with other species, erosion control, shelter or food for animals, etc.	
<b>12. Specific problems or remarks regarding this plant</b>	

Date, Signature \_\_\_\_\_

<sup>1</sup> Example : Roots of adult plants collected (10 year old): Rate of replacement = 10 years.

<sup>2</sup> Example: "app. 30% of all flowers of the tree" or "The lowest limb of a 100 ft tall tree is pruned off"

## Annex II: Plant Monograph (example)

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**Botanical name:** *Juniperus communis* L.

Local names Klekinja, kleka, plava kleka, fenja, smreka, smrekovina, borovica, brinja

### Plant description

Juniper tree belongs to the family Cupressineae. It grows up in mountain regions as evergreen bush 1m high, or as a small tree, 10m high, in the region of lower altitude.

Single tree has pyramid shaped treetop, but if several trees are growing in the same place, the treetop is irregular.

Leaves are thin, needle-shaped, 10 - 20 mm long.

Flowers are small, yellow-green placed in the angle of leaf.

Juniper tree is bicameral plant-one plant has male, and the other one has female flowers.

The fruit is a berry maturing the next year. At the same time the plant has green and ripe fruits. The fruit, if green at the beginning, later rust, and as ripe fruit has ashen blue-black colour.

Other varieties as sources for adulteration:

- *Juniperus oxycedrus* L. (Crvena kleka)

We can find Red *Juniperus* diffused in southern parts of BH. The berries are bigger than the berries of *Juniperus communis*; 12 mm in diameter, dark red coloured.

- *Juniperus macrocarpa* (Pukinja)

The berries of *Juniperus macrocarpa* are bigger than the berries of *Juniperus communis*. The difference is the bluish coating. The berry doesn't have commercial value.

- *Juniperus sabina* L. (Somina, Glušac, Gluha smreka)

*Juniperus sabina* is present in BH near the Adriatic Coast. The berries are blue-black or black, 5-8 cm in diameter, poisonous.

- *Juniperus phoenicea* L. (Gluhaè) We can find *Juniperus phoenicea* in coastal region. The berries are much bigger than the berries of *Juniperus communis*, yellow or red-yellow, poisonous.

### Characteristics of the collection areas

We can find Juniper tree growing in sparse pine and birch forest, in mountain-cleared land, in uncultivated, neglected, dry, bare, rocky places.

### Plant parts harvested

- Ripe fruit (*Juniperi fructus*)

### Time period of collection

The berries are ripe and ready for the collection when blue-black. In our region this happens from the end of August till October, depending on the altitude.

### Harvesting tools

Jute linen 2 x 2 m, gloves, metal or wooden hook, umbrella.



### **Post collection treatment**

The juniper fruit should dry in a windy place and should be turned from time to time. A thin layer allows easier turning of the berries and uniform drying. After drying the berries should be clean from eventual dirt, needles, green berries etc. To pack in jute bags.

The dried fruit is fleshy and 5-9mm in diameter, dark-violet. The pulp is dark-green, soft, and after longer time it becomes spongy. The fruit of juniper has agreeable smell and sweet bitter flavour.

*Source: GTZ/SIPPO/IMO Manual 2003*



### **Collection method**

Berries can be picked by hand or shaken from the shrub on previously prepared linen or similar cloth (umbrella). Shaking should be done carefully in order not to shake the green berries. It is important to

collect ripe berries 20% of the fruits need to be left for regeneration. No cutting of juniperus!

Important to know that forest fire represents special danger for this plant since it doesn't have the possibility to regenerate.

## Annex III: Record on traditional rights, responsibilities and management systems

Traditional Rights, Responsibilities & Management Systems Format			
Product/Service	Rights Who has use rights?	Responsibilities Who has responsibilities?	Traditional management systems Describe any traditional ecosystem management or ecosystem use systems

Record of Traditional Rights and Responsibilities in Lobneykha Community Forest			
Product/Service	Rights Who has the right? What are they?	Responsibilities Who has Responsibilities? What are they?	Traditional management systems Describe any traditional forest management or forest use systems
<i>Timber</i>	<i>Everyone including outsiders has rights provided that the individual holds a valid permit</i>	<i>Government controlled, Forestry Department issues permits</i>	<i>Before 1969 no outsiders were allowed to collect timber, the Mangmi and Chipon were controlling the quantities collected by Lobneps</i>
<i>Fodder</i>	<i>Lobneykha community</i>	<i>Free access for Lobneykha community</i>	
<i>Grazing</i>	<i>Only Lobneykha community members are allowed to graze their cattle on Lobneykha pastures and forest areas</i>	<i>Free access for Lobneykha community</i>	<i>Before 1969, pasture taxes were collected, grazing times fixed and every 3 years the pastures were burned</i>

Source: COMMUNITY FORESTRY MANUAL FOR BHUTAN, Part II Community Forest Management Planning, 2004. Developed with the support of Wang Watershed Management Project (European Union), Bhutan-German Sustainable Renewable Natural Resources Development Project (GTZ) and Participatory Forest Management Project (SDC/Helvetas)





## Annex VI: Risk assessment

<b>Company / project name:</b>	
<b>Plant (Scientific name):</b>	
<b>Region and Country:</b>	
<b>Date of risk assessment:</b>	

### Summary of risks

	Low Risk	Medium risk	High risk
<b>Sustainability risk of target species</b>			
<b>Sustainability: local/project factors</b>			
<b>Risks for the habitat</b>			
<b>Social/institutional issues</b>			
<b>Contamination/Quality</b>			
<b>TOTAL</b>			

### Instructions:

Choose for each criterion in the table below the risk category and mark it with a 1 in the blue text box. Sum up the number of low, medium and high risks of each section and fill in the summary table above. For each section, all identified risks (medium and high) should be addressed in the Management Plan (chapter 9 of the Management Plan Matrix in the guidance manual). Strategies should be developed for reducing or preventing the identified risks.

### 1a Sustainability risk of target species

	Low Risk	Medium risk	High risk	Remarks
<b>Survival of the individual plant after collection possible</b>	Yes, always without problem (e.g. berries, flowers)	Only if collected using accurate methods (specific knowledge required)	no (roots are collected, no recovery of the single plant possible)	
<b>Biotic reproduction capacity of the single plant after collection (if not relevant to be left empty)</b>	hardly or not affected by collection (collection after reproduction season, collection of leaves etc)	affected but still possible (collection of berries, seeds flowers but a part of these are left for reproduction)	not possible (whole plants, roots, flower in case there is only one single flower etc)	
<b>Reproductive Biology</b>	easy	normal	difficult, weak resprouters	
<b>pollination</b>	wind, abiotic, asexual	common biotic (birds, insects)	highly specific (beetles, bees, bats)	
<b>dispersal</b>	wind, water	common generalists (birds, small mammals)	large mammals and large birds, complicated mechanism	

	Low Risk	Medium risk	High risk	Remarks
<b>Geographic Distribution</b>	wide (abundant in many different regions of the world)	medium (abundant in a larger area/climatic zone, e.g. southern Europe)	restricted (abundant only in few countries/regions)	
<b>Habitat Specificity</b>	broad (not habitat specific, no special needs)	medium (specific needs but of common conditions e.g. edge of a forest, freshwater plants, alkaline soil etc..)	very specific (e.g. deserts, high altitude, symbiotic etc)	
<b>Local Population Size</b>	large (very common plant, dense population, found almost everywhere in the whole area)	medium to large (medium density, but still common; patch wise distribution etc)	small, (rare plant, rare individuals or only few isolated populations, hard to be found)	
<b>Population development</b>	growing	stable	decreasing	
<b>Growth</b>	fast	medium	slow	
<b>Part of Plant Used</b>	leaves, flowers, fruit, dead wood	exudates, sap (flowers*), bark**	whole plant, roots, bulbs, apical meristems (bark)	
<b>Single vs Multiple Use</b>	single or non-competing	few, low conflict between users	multiple-use species	
<b>Single vs multiple groups of users</b>	One company or community of collectors	More than one company / community collects, but with clear management agreements	More than one company / community collects without management agreements	
<b>Conservation status and value</b>	Collector knowledge and other indicators suggest stable and surplus species abundance, distribution, or quality		Collector knowledge and other indicators suggest reductions in species abundance, distribution, or quality	
<b>Demand on the market</b>	low	medium	high	
<b>Price of Product</b>	Low value product	Medium	High value product	
<b>TOTAL</b>	<b>0</b>	<b>0</b>	<b>0</b>	

Adapted from Cunningham (2001) and Peters (1994).

\*if a plant has a single or very few flowers (arnica, primula etc)

\*\* if the bark is not used from the stem but from smaller branches.

## 1b Sustainability Risk: Project / Area Specific Factors

	Low Risk	Medium risk	High risk	Remarks
<b>Collecting Place</b>	Well defined and assigned to each collector/collection company	Several collectors/collection companies in one place active	Open, uncontrolled collection by anybody	
<b>Regulatory System</b>	Effective protection from unauthorized collection and other illegal activities	Partially functioning regulatory system	No effective regulatory system protecting the area	
<b>Situation of Collection Area</b>	Remote, inaccessible	Accessible but far off	Well accessible by car	
<b>Collectors Habitation</b>	In or adjacent to collection area	Traditional collectors coming each year	Migrating labour	
<b>Collectors Knowledge</b>	Traditional and trained in sustainable practices	Traditional	No knowledge of wildlife and ecology	
<b>Social Self-control</b>	Strong self-control by the village society	Weak self-control	No control existing	
<b>Roamers collection monitoring in place</b>	Yes	Partially	No	
<b>Importance of Collection</b>	Minor additional income to the collectors	Additional income to the families	Only source of income in this area	
<b>Buyer Availability in or near the area</b>	Only one buyer available	Few traditional buyers	Many buyers, near open market place	
<b>High demand for collectors</b>	No	Partially	Yes	
<b>Contracted Harvest (between collectors-collection company)</b>	Collection only for what is contracted	Free collection for contracted buyer	Free collection on own initiative and risk	
<b>High price for products (for collectors)</b>	No	Partially	Yes	
<b>Contract with collectors signed</b>	Yes	Partially	No	
<b>Buyer Agreements on Quantities Defined (Between Collection Company-Buyer or Importer)</b>	Yes	Partially	No	

	Low Risk	Medium risk	High risk	Remarks
<b>Size of collection operation</b>	Small company, collected quantities clearly far below available yield according to resource assessment	Small company, quantities estimated to be far below available resources (overall assessment but no accurate resource assessment performed)	Intensive collection company, high collection quantities (near available yield, with or without resource assessment)	
<b>Skills and capacities (knowledge, financial, tools, etc.) to implement sustainable collection and monitoring</b>	All actors have the required means to carry out their tasks	Partially	Clearly not sufficient skills and capacities to carry out the required tasks	
<b>TOTAL</b>	<b>0</b>	<b>0</b>	<b>0</b>	

## 2 Risks for the habitat

	Low Risk	Medium risk	High risk	Remarks
<b>Special Interdependency between Collected Plant and Other Plant Species</b>	None	Low	High interdependency (symbiotic relation, etc.)	
<b>Importance of Collected Plant/Part of Plant for Animals</b>	None	Low (not main feed/shelter source for animals)	High (animals depend to an important extent on the collected species/part of plant for survival)	
<b>Other special functions of the collected plant/part of plant in the ecosystem (land stabilisation, erosion control)</b>	Not relevant/function in ecosystem not affected at all by collection	Impact on species function in the ecosystem not relevant in case of correct collection method	Important species to ensure stability of the ecosystem + whole plant collected or function otherwise affected by collection	
<b>Research being done by the project</b>	Elaborate research programme exists	Some done	None	
<b>Use of Other Species During Collection or Processing</b>	No other species used by collectors	Some use of other common species	Intensive use of specific species	
<b>Collectors influence on the habitat</b>	None	Some influence (e.g. fireplaces, some hunting, etc.)	High impact, collectors camp on the area, high use of firewood, dumpsites, hunting, etc.	
<b>Cultivation Measures or Measures Promoting the Collected Species</b>	None	Some supportive measures done	High impacts into natural habitat	
<b>Monitoring</b>	Close monitoring of biodiversity and ecosystem done	Some monitoring done	No monitoring	
<b>Ground water control (especially considering processing)</b>	Well done	None	Water exploitation/ pollution	
<b>TOTAL</b>	<b>0</b>	<b>0</b>	<b>0</b>	

### 3 Social/ Institutional Issues

	Low Risk	Medium risk	High risk	Remarks
<b>Collection Area</b>	Well defined boundaries	Semi-controlled	Open, uncontrolled, boundaries unknown	
<b>Tenure Rights</b>	Clear land ownership, collection permits needed	Several collectors in one area active	Open, uncontrolled collection by anybody	
<b>Collectors Groups</b>	Well defined, traditional groups	Defined, individual	Undefined, individual	
<b>Several companies in the area</b>	No	Partially	Yes	
<b>Stakeholder involvement</b>	All involved stakeholders benefit from the project and collaborate	Low collaboration	No collaboration/ different interests and goals	
<b>Competences and means</b>	All actors have the required means (knowledge, finance, infrastructure, transport, etc.) to carry out their tasks	Partially	Clearly not sufficient skills and capacities to carry out the required tasks	
<b>Responsibilities and fulfilment of tasks</b>	Responsibilities clearly defined and understood by all actors. Tasks fulfilled accordingly.	Actors aware of responsibilities, some aspects need to be improved	No clear definition of responsibilities/ no fulfilment of tasks	
<b>Communication</b>	Good information flow between stakeholders and regular meetings held	Irregular information flow, only sporadic meetings	No exchange of information, important stakeholders do not assist to meetings/no meetings organised	
<b>Traditional users of the species</b>	No traditional users of the species in or near the area / species not used by local people	Some traditional users collect in small quantities	Species has an important cultural/ religious significance for local people	
<b>Customary rights on the area</b>	No traditional users in or near the area / no customary rights on the area	Small use of the area/ of other species in the area by local people (other than collectors of the company)	The area has been traditionally used and managed by local communities and/or has an important significance for local peoples, who are not the collectors of the ISSC-MAP managed operation	
<b>Ethnic / Religious Problems</b>	No problems existing	Different groups of collectors and users	High tension between different groups	
<b>Documentation</b>	Comprehensive records available	Some records available	No records available	
<b>TOTAL</b>	<b>0</b>	<b>0</b>	<b>0</b>	

#### 4 Sources of contamination and quality/ traceability Issues

	Low Risk	Medium risk	High risk	Remarks
<b>Power Station, Heavy Industry, Mines, Airport, Highways, etc.</b>	None	In far distance	In or adjacent to collection area	
<b>Intensive Agriculture, Govt. Spraying</b>	None	In far distance	In or adjacent to collection area	
<b>Cultivation in habitat</b>	None	In far distance	In or adjacent to collection area	
<b>Dump Sites, Towns</b>	None	In far distance	In or adjacent to collection area	
<b>Other Environmental Contamination</b>	No source of contamination existing	Low risk of contamination	Pollutant in the vicinity	
<b>Quality requirements defined</b>	Yes, clearly	Partially	No	
<b>Collection methods</b>	Traditional collection methods according to quality requirements	Partially appropriate collection methods	Traditional collection methods not at all controlled <input type="checkbox"/> to ensure quality, intensive training and monitoring needed to change practices	
<b>Handling by collectors</b>	Adequate and controlled handling by collectors	Normally appropriate handling, no regular supervision	Product commonly dried/processed on the ground (not on mats) or treated wood layers, no supervision by company	
<b>Contamination in collectors homes</b>	No risk/no storage or processing at collector's homes	Low risk of contamination	Very poor sanitation situation in the houses, common use or storage of synthetic products (e.g. agrochemicals, rodenticides)	
<b>Quality Control during purchase</b>	Quality control for harvest products implemented	Traditional interaction with collecting station	Sales at any price and conditions	
<b>Quality Control during processing, storage and handling</b>	Appropriate processing, handling & storage methods and quality control	Acceptable processing & storage and quality control	No adequate processing / no control of quality issues during processing, handling or storage	
<b>Pest Management and Hygienic measures in purchase, processing and storage units</b>	No chemical pest management, cleaning only with water	Documented use of synthetic products, only when store is empty and waiting period respected	Uncontrolled/undocumented use of synthetic products, waiting period not always respected	

	Low Risk	Medium risk	High risk	Remarks
Knowledge of collectors and staff	All collectors, purchase and handling staff well trained on quality and contamination issues	Partially	No training, collectors and employees not aware of quality and contamination risks	
Traceability well possible	Yes	Partially	No	
Collectors books well kept	Yes /not relevant	Partially	No	
Books at collecting station well kept	Yes	Partially	No	
Pre-processing well defined, documented	Yes /not relevant	Partially	No	
Harvest estimations available and checked	Yes	Partially	No	
Good maps and site descriptions at hand	Yes	Partially	No	
Lot number system in place and meaningful	Yes	Partially	No	
<b>TOTAL</b>	<b>0</b>	<b>0</b>	<b>0</b>	

## Annex VII: Glossary

Term	Definition	Source
Adaptive management	An integrated, multidisciplinary approach for confronting uncertainty in natural resources issues. It is adaptive because it acknowledges that managed resources will always change as a result of human intervention, surprises are inevitable, and that new uncertainties will emerge. Active learning is the way in which the uncertainty is winnowed. Adaptive management acknowledges that policies must satisfy social objectives, but also must be continually modified and flexible for adaptation to these surprises. Adaptive management therefore views policy as hypotheses- that is, most policies are really questions masquerading as answers...and management actions become treatments in an experimental sense.	HOLLING 1978; WALTERS 1986
Benefit sharing	Participation in the economic, environmental, scientific, social or cultural benefits resulting or arising from access to genetic resources and associated traditional knowledge under mutually-agreed terms.	SECO 2005
Bill of lading	A document that establishes the terms of a contract between a shipper and a transportation company. It serves as a document of title, a contract of carriage, and a receipt for goods.	J. BRINCKMANN (personal communication)
Biological diversity	The variability among living organisms from all sources including, inter alia, terrestrial, marine and other aquatic ecosystems and the ecological complexes of which they are a part; this includes diversity within species, between species and of ecosystems.	UNEP 2001
Botanicals	A subset of NTFPs that includes herbal medicines, personal care products, and functional foods.	PIERCE and LAIRD 2003
Chain of custody	The path taken by raw materials and products, from the forest to the consumer, including all successive stages of processing, transformation, manufacturing, and distribution.	FSC 2006
	A tracking system that enables certifiers to trace each forest product from its origin through harvesting, processing, storage and sale.	SHANLEY et al. 2002
Collectable yield / harvestable yield	Maximum available quantity for collection.	See PETERS 1996

Term	Definition	Source
Collection operation	Structured operation organizing wild collection activities. For commercial companies such operations usually consist of three major parties: The collectors, local purchasers/purchase centres and the main processor/trader, which usually is the actual collection operator or collection manager.	
Consensus	General agreement, characterized by the absence of sustained opposition to substantial issues by any important part of the concerned interests and by a process seeking to take into account the views of interested parties, particularly those directly affected, and to reconcile any conflicting arguments. Need not imply unanimity.	ISEAL 2004
Criterion	A state or aspect ... which should be in place as a result of adherence to a principle. The way criteria are formulated should give rise to a verdict on the degree of compliance in an actual situation.	LAMMERTS VAN BUEREN and BLOM 1997.
	A standard on which judgement or decision may be based; a characterizing mark or trait.	ENCYCLOPÆDIA BRITANNICA 2006
	A means of judging whether or not a principle has been fulfilled. A criterion adds meaning and operability to a principle without itself being a direct yardstick of performance.	SHANLEY et al. 2002.
	Indicates what a standard measures.	ISEAL 2004
	A means of judging whether or not a Principle (of forest stewardship) has been fulfilled.	FSC 2000
Customary rights	Rights that result from a long series of habitual or customary actions, constantly repeated, which have, by such repetition and by uninterrupted acquiescence, acquired the force of a law within a geographical or sociological unit.	FSC 2000
Ecosystem	A community of all plants and animals and their physical environment, functioning together as an interdependent unit.	FSC 2000
Endangered species	Any species that is in danger of extinction throughout all or a significant portion of its range.	FSC 2000
Ethical	Conforming to accepted professional standards of conduct.	ENCYCLOPÆDIA BRITANNICA 2006
Ex-situ conservation	The conservation of components of biological diversity outside their natural habitats.	UNEP 2001
Extent of collection	Extent: the range over which something extends: scope.	ENCYCLOPÆDIA BRITANNICA

Term	Definition	Source
	<p>Scope: extent of treatment, activity, or influence: range of operation</p> <p>Scale: a distinctive relative size, extent, or degree &lt; projects done on a large scale.</p> <p>Rate: a fixed ratio between two things; a reckoned value; a quantity, amount, or degree of something measured per unit of something else</p> <p>Intensity: the magnitude of a quantity (as force or energy) per unit (as of area, charge, mass, or time).</p> <p>Frequency: the number of repetitions of a periodic process in a unit of time</p> <p>Volume: the amount of space occupied by a three-dimensional object as measured in cubic units; the amount of a substance occupying a particular volume.</p> <p>Quantity: a determinate or estimated amount</p> <p>Level: the magnitude of a quantity considered in relation to an arbitrary reference value; broadly = magnitude, intensity.</p> <p>Yield (sustainable annual): to bear or bring forth as a natural product, esp. as a result of cultivation; product, esp. the amount or quantity produced or returned.</p>	2006
Guideline	An indication or outline of policy or conduct.	ENCYCLOPÆDIA BRITANNICA 2006
Habitat	The place or type of site where an organism or population naturally occurs.	UNEP 2001
Harmonization	Harmonization is the process by which the content of two or more standards is brought into increasing conformity. Activities that support harmonization include, but are not limited to the use of common criteria and indicators, statements of common objectives, adoption of common structures for presentation of standards, and development and adoption of a single international standard.	ISEAL 2004
Indicator	A quantitative or qualitative parameter which can be assessed in relation to a criterion.	LAMMERTS VAN BUEREN and BLOM 1997.
	Qualitative or quantitative parameter that can be assessed in relation to a criterion. It describes in an objectively verifiable way the features of the ecosystem or a related social system. Minimum or maximum allowable value of an in indicator is known as threshold value (i.e., a way of quantifying	SHANLEY et al. 2002

Term	Definition	Source
	or qualifying or measuring performance).... An indicator is assumed to include a performance value and is therefore called a performance indicator.	
	How criteria are measured.	ISEAL 2004
In-situ conservation	The conservation of ecosystems and natural habitats and the maintenance and recovery of viable populations of species in their natural surroundings and, in the case of domesticated or cultivated species, in the surroundings where they have developed their distinctive properties.	UNEP 2001
Management Plan	A Management Plan is a written document in which the resource manager or management committee sets out its goals and the approaches it will use to accomplish those goals in a given period of time. The ISSC-MAP Management Plan sets forth standards and procedures, responsibilities and work practices required to fulfil the principles of the ISSC-MAP Standard.	
Medicinal and aromatic plants	"Medicinal" and "aromatic" are terms describing properties of chemistry and use that can be ascribed to plants. Medicinal plants prevent, alleviating, or curing disease. This group can be defined narrowly, to include only those plants already known to be used in this way in some system of medicine, traditional or modern, or it can be defined broadly to include potential, as yet undiscovered uses of this nature. Aromatic plants contain fragrant, essential oils valued as perfumes, herbs, spices, and as medicines. Many "medicinal" plants are thus also "aromatic" (and vice versa), just as medicinal and aromatic uses overlap within particular taxa with other important categories of plant use, such as foods and beverages. The coincidence of highly desirable qualities within particular taxa makes these groups all the more important as plant genetic resources. The degree of overlap between medicinal and aromatic properties and uses has supported the treatment of medicinal and aromatic plants as a single category, particularly from the point of view of commercial harvest, trade, and agriculture.	LEAMAN et al, 1999
Monitoring	Systematic observation of indicators to assess changes or whether desired conditions are being	

Term	Definition	Source
	attained.	
Mutually-agreed terms	Conditions and provisions of access and benefit sharing, among others, negotiated between the user and the provider and involving other relevant stakeholders.	SECO 2005
Non-timber forest products	All forest products except timber, including other materials obtained from trees such as resins and leaves, as well as any other plant and animal products.	FSC 2000
	All biotic products other than timber that can be harvested for subsistence and/or for trade. NTFPs may come from primary and natural forests, secondary forests, and forest plantations, as defined by FSC regional Working Groups.	FSC 2000
Organic agriculture = biological agriculture = ecological agriculture	A whole system approach based upon a set of processes resulting in a sustainable ecosystem, safe food, good nutrition, animal welfare and social justice. Organic production therefore is more than a system of production that includes or excludes certain inputs.	IFOAM 2004
Precautionary principle; precautionary approach	An approach to uncertainty that provides for action to avoid serious or irreversible environmental harm in advance of scientific certainty of such harm.	COONEY 2004
Principle	A fundamental law or rule, serving as a basis for reasoning and action. Principles are explicit elements of a goal.	LAMMERTS VAN BUEREN and BLOM 1997.
	A comprehensive and fundamental law, doctrine, or assumption.	ENCYCLOPÆDIA BRITANNICA 2006
	A fundamental truth or law as the basis of reasoning or action; an essential rule or element.	SHANLEY et al. 2002
	An essential rule or element.	BROWN <i>et al.</i> 2000
Prior informed consent	Consent obtained by the user from the State and other providers, as the case may be, after fully disclosing all the required information, that allows access to their genetic resources and associated traditional knowledge under mutually-agreed terms.	SECO 2005
Protected area	A geographically defined area that is designated or regulated and managed to achieve specific conservation objectives.	UNEP 2001
Resource manager	Person, group of persons, organization or authority	

Term	Definition	Source
	responsible for the use and management of the natural resources in a defined area.	
Standard	A definite rule, principle, or measure established by authority.	ENCYCLOPÆDIA BRITANNICA 2006
	Principles + criteria = standard.	FSC 2000
	Practice standard = core commitment (fixed requirements / the outcome or condition to be achieved in all applicable circumstances, applicable to all) + guidance (flexible, to be respected in intent and are available to be adopted according to the specific circumstances, levels, and sectors), documentation and reporting (to bring transparency to the application of the commitments and guidance).	SECO 2005
	Document that provides, for common and repeated use, rules, guidelines or characteristics for products or related processes and production methods, with which compliance is not mandatory. It may also include or deal exclusively with terminology, symbols, packaging, marking or labelling requirements as they apply to a product, process or production method.	ISEAL 2004
Sustainable use	The use of components of biological diversity in such 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.	UNEP 2001
Sustainable yield	Harvest at a rate equal to the annual growth rate.	ZABEL et al. 2003
Tenure	Socially defined agreements held by individuals or groups, recognized by legal statutes or customary practice, regarding the "bundle of rights and duties" of ownership, holding, access and/or usage of a particular land unit or the associated resources there within (such as individual trees, plant species, water, minerals, etc).	FSC 2000
Threatened species	Any species that is likely to become endangered within the foreseeable future throughout all or a significant portion of its range.	FSC 2000
Traceability	The completeness of the information about every step in a process chain.	WIKIPEDIA 2006

Term	Definition	Source
Traditional knowledge, innovations and practices	Knowledge and practices of an individual or collective nature, of indigenous peoples and local communities associated with genetic resources and related to the conservation and sustainable use of biological resources.	SECO 2005
Use rights	Rights for the use of forest resources that can be defined by local custom, mutual agreements, or prescribed by other entities holding access rights. These rights may restrict the use of particular resources to specific levels of consumption or particular harvesting techniques.	FSC 2000
Verifier	Describes the way an indicator is measured in the field (i.e., data points or information that enhance the specificity or the ease of assessment of an indicator). The intention in this process is not to prescribe a minimum set of verifiers, but to allow room for verifiers that are specific to region, product, class, operation size, etc. Verifiers add meaning, precision and usually also site-specificity to an indicator. Numerical parameters might be assigned to a verifier on a case-and-site-specific basis.	SHANLEY et al. 2002
Viable population	A population that is capable of maintaining itself over a given period of time.	
Wild collection	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).	
Zones of influence	Zones inside the collection area that are in fact being harvested by collectors. The zones of influence do not necessarily correspond to the total area of distribution of target species in the collection area.	