



## Guidance Document on Wild Harvest Population Monitoring

Sustainable wild collection ensures that plants are collected in such a way that:

- the plant populations do not decrease,
- the species survives in the long-term,
- the surroundings are not damaged,
- and no other plants or animals are disturbed.

As wild populations and the impact of harvesting varies widely among different species and techniques, it is important to develop a plan that is adaptive. The first step is to do a resource assessment, including an inventory of the target species to be wild harvested.

### Resource Assessment

Included in the resource assessment is biological and ecological information on the species.

Answer the following types of questions in this resource assessment:

- How large (in the world) is the distribution of this species?
- What is its status, is it considered a threatened resource?
- What is its basic biology—how long does it live, how does it reproduce?
- Does it seem to have any associations with other plants or animals; such as, is there a specific pollinator related to it, or does it always seem to be growing among other types of plants?

### Inventory

Within the resource assessment, the approximate number of individuals on the holding should be calculated so that the amount of raw material available could be assessed. The calculation of the amount of the raw material to be harvested (“target resource”) depends on the population density and the density of the resource to be managed (for example, amount of fruits per area unit). To determine this, answer these questions:

- Within the holding and surrounding area, what is the distribution of the species—include more specific information within the holding.
- What is the approximate number of individuals present on the holding? (This might be calculated by counting the individuals in one stand and then approximating by the other known present stands of the resource).
- What is the approximate total amount of the target resource available on the holding? For example, if fruits from a particular tree were desired, what is the approximate total amount of fruits produced yearly on the holding?

### Harvest Rate

Now that the inventory and assessment of how much of the target resource is available is calculated, determine how much of the target resource can be *sustainably* harvested. To

be sustainable, the harvest rate must always be lower than the regeneration rate of the resource.

- To determine this, calculate how much of the desired resource can be harvested from one individual (only mature adults should be harvested), and then approximate how much can sustainably be harvested. This harvest rate can be calculated based on a chosen percentage of the whole resource. For example, it may be chosen to harvest 40% of the fruits from the population on the holding, leaving 60% to regenerate. The harvest rate must always be less than the regeneration rate of the target species.

### **Monitoring System**

Once the harvest rate has been established, a monitoring system will need to assess the impact of the defined harvest rate and make appropriate changes over time. Appropriate methods and procedures must be developed on a case-by-case basis, but this guidance intends to give a basic guide of the steps. If a resource is scarce, lower harvest rates should be set and then increased when possible after regeneration is assured. In order to create a monitoring system, it is best to use test plots (transects) and/or marked individuals to monitor over time. Monitoring can happen during the yearly or seasonal harvest, or at other times of the year, as long as it is consistent and reflects the full growth and presence of the target resource.

#### ***The equipment needed for making a permanent test plot:***

- Camera (preferably one that records the date)
- 100-foot metal tape
- 1 square yard frame made of light PVC piping
- Pad of paper and marker pen
- Clipboard and pen or pencil
- Monitoring data forms
- 2 steel posts
- 5 short lengths of rebar
- Heavy hammer (for pounding rebar rods)

Choose your test plot locations which reflect healthy stands of the target resource. At each site, pound in the steel posts at the end of a 100-foot tape and leave them to protrude from the ground about 3 feet. Then, hammer in the short rebars flush to the ground at 10, 30, 50, 70 and 90 feet. It is best to mark the coordinates of the test plot, as most mapping apps on cellular phones now will give you those locations.

#### ***The basic procedures for Monitoring:***

**Pictures.** First, take a picture, looking along the transect from each end standing as close as possible to the marker rebar. Next, place the frame with its one corner directly over the rebar flush with the ground, with the long side along the tape, and take a photo standing vertically above with the frame just filling the full viewfinder. Repeat at each rebar point.

**Record Observations** on the data forms: Record your observations on the data forms on the individuals in the transect: questions on the data forms can include: how many are there, in what shape are they, how big are they, what life stages are present? Have any been obviously

harvested from or trampled? Any signs of sickness or disease? If reproductive stages are present (like fruits), how many are there? Record any other relevant observations about the population. What is the status of the available yield of the target resource?

**Assessment:**

Now that the data is collected, an assessment can be made of the impact of the current harvest technique and rate. The key questions for assessment of your harvest are:

- Is the harvest rate successful in sustaining the harvest quality and quantity?
- Is the target resource maintaining the base-line yields and population regeneration?
- What adjustments should be made to the harvest rate or technique to maintain the resource quality over time and avoid negative impacts on the environment and the target resource?

As harvest of the target resource is carried out every year or season, the monitoring data should be assessed for these questions. The current harvest rate can be considered sustainable (for a non-threatened population only) if:

1. the monitoring finds regeneration continuing where seedling/sapling levels are at or above baseline levels,
2. yields studies indicate that the availability of the target resource is not decreasing,
3. and harvest assessments indicate that vigour, productivity, and other factors are not a concern.

If any of the above are not true, then possible adjustments can include:

- Reducing the number of alter the size-class of the harvested individuals,
- Reducing the proportion of the collection area harvested in a given season,
- Adjusting the harvest method to make it less damaging to the individual and the surrounding habitat.

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**Standards/Documents Consulted:**

IMO Sustainable Wild Collection Practises

<http://www.whygowild.com/en/resources/training>

UNCTAD Guidelines for the Development and Implementation of Management Plans for Wild-Collected Plant Species used by Organisations Working with Natural Ingredients

<http://www.whygowild.com/en/resources/training>

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

<http://www.whygowild.com/en/resources/training>

Assessing Land Health & Productivity: Holistic Management Biological Monitoring

<https://holisticmanagement.org/training-programs/distbio/>