



CERTIFICATION OF SUSTAINABLY HARVESTED INDIGENOUS PLANT PRODUCTS

1. Background

Indigenous plant resources in Ethiopia are under considerable threat from high population pressure, inadequate management and protection in National Parks and Forest Priority areas. Satellite data in recent years shows ever-diminishing areas of natural forest both within and outside protected areas.

The specific threats are; cultivation of natural pastures, overgrazing causing both soil erosion and browsing of tree seedlings that stunts growth, depletion of trees for firewood, and loss of plant biodiversity. The core problem is that the natural resources of the Bale eco-region are poorly managed producing an unsustainable flow of benefits for local communities. The project has to try and ensure that these benefits are put on a sustainable footing and that all potential ideas are explored.

Sustainable harvesting of indigenous/wild plant species can only be achieved if the harvesters understand the need for the systems, gain benefit from them and receive sufficient training and extension assistance in up-keeping them. The endorsement of these systems by third party verification, such as organic certification, enabling the producers to access more rewarding markets is also a fundamental part of ensuring that the sustainable wild harvesting protocols are well managed and maintained into the future.

2. Developing a pilot phase

A pilot phase is particularly necessary where there are a number of parameters not fully researched and determined. It is also critical that before engaging in a full programme of commercial harvesting and processing that the training and extension component is well established and active, the wild harvesting groups are strong and well managed, the sustainability protocols agreed by all interested parties, systems developed and in place and the harvesters are well versed and able to comply with these protocols.

Throughout the pilot phase, impact monitoring must take place so that the protocols can be sharpened or adjusted according to the results. The areas will include:

- Inventories and mapping of wild plant populations should be made so that sustainable harvesting levels can be established without negatively impacting the overall plant population in a given areas.
- Use of transects to measure the impact of wild harvesting of the selected indigenous species in terms of the health and vigour of the plants
- The optimum levels of harvesting to ensure the continuity of supply whilst avoiding over-harvesting
- Impact of slight variations in the harvesting techniques on plant recovery and survival.
- Socio-economic impact; the incomes achieved from the harvested plant materials and the ratio of women and disadvantaged engaging in economically rewarding activities stemming from this initiative (i.e incomes from harvesting, processing, grading, support activities such as training and extension etc).



Practical guidelines for the sustainable harvesting of the selected indigenous plant products need to be developed which can be effectively used by the local/resident communities. The protocols need to be suitable for use by the communities and for the purposes of certification, in the form of a report and as written information/ interpretation material. Methodologies for sustainable wild harvesting must provide traceability from harvesting through to the processing at rural levels.

Training will need to be developed progressively as time framed activities, combining practical demonstration, lectures and group work, demonstration and learning visits to other similar commercial sustainable wild harvesting programmes. The trainings will need to be supported by sensitisation/ educational/ training materials, including simple laminated pictorial leaflets explaining the sustainable wild harvesting methods for each of the selected species, posters and educational videos.

3. Mapping and zoning

The map is the first tool for developing sustainable wild harvest systems. The map should identify the main ecosystems and predominant botanical species. The species that is to be the subject of wild harvesting is then marked clearly in the regions where it is most abundant. The areas where wild harvesting would damage the health of the species /habitat/ natural diversity should be marked in red as non-intervention zones (blocked from collection).

Contaminated areas, i.e close to industry, military shooting areas, timber processing etc is also marked on the map (if relevant to the areas of the Bale eco-region identified for sustainable wild harvesting).

This initial mapping stage has been assessed only in general terms during this assignment, and a detailed mapping needs to be carried out by local botanists familiar with the area, preferably using GPS plotting methodology. The plotted areas are then incorporated into operation maps, clearly marked as harvesting zones for each specific species.

From this point a detailed botanical survey of the selected plant species growing in these zones should take place using transects, as described in this document, together with assessment of the overall plant stand. This information gives rise to the harvesting capacity and more exact harvesting thresholds of the selected species within the identified zones. From this position the rotation of harvesting across and within the zones over the entire mapped areas can be developed. This is the foundation for the sustainable wild harvesting protocols.

Definition and description of collection areas

The definitions and description of the selected harvesting areas must accord with those officially recognized and established, and include the local names and references known by the resident population/harvesters.

Identification of emission sources and spraying

Any areas that present a risk of contamination of the wild plant material must be plotted on the official maps and designated as non-harvesting areas. These areas should include 30 meters (i.e from fertilized fields) to 500 meter (from residential areas) buffer zones.

Designated harvesting areas and harvesters

There must be a strong relation between the area size and the number of collectors to assure that sustainable harvesting levels can be established without negatively impacting the overall plant population in a given area. A continuity of supply must be assured while avoiding over-harvesting.

After the approved map is put on the wall at the registered collection centres, the collectors sign that each delivery is harvested within the approved areas.

In order not to disturb the overall ecology of the harvesting area, the harvesters should use certain identified route to reach the harvesting areas, and risk management protocols established to govern movement within these areas.

4. Harvesting methodology

Once the mapping component is in place the harvesting methodology has to be developed. This is again a process of monitoring and evaluation sharpened and adapted through the pilot phase. The economic aspects need to be included in the harvesting methodologies as well as ensuring the continued health of the plant, for example:

Timing of harvest;

The rotational harvesting chart and mapping, reinforced through the governance and monitoring systems (i.e under the Internal Control System - ICS) is an important mechanism to ensuring that this takes place and over harvesting of the more assessable areas does not occur. Regarding the timing of the harvest in terms of the best hours of the day, as the plant is more easily stressed during the middle of the day, harvesting should be carried out during the early morning up (6am) to 11am. The best plant recovery period is over night.

Harvesting levels example:

Species	Frequency of harvesting	Harvesting technique	Comment
<i>Helichrysum citrispinum</i> <i>Helichrysum splendidum</i>	Harvesting interval of 4 years (of the same plants)	Cut no lower than 8-10 cm from the ground	Ensure that the harvesting areas are well defined to ensure no harvesting within the park boundaries
<i>Thymus schimperi</i>	Harvesting interval of 2 years (of the same plants)	Cut no lower than 5 cm from the ground, or 35% of the plant foliage.	Common abundance across plateau.

5. Monitoring and evaluation information for measuring impact of wild harvesting

The sustainability threshold of the selected plants means ensuring that the plant population is not depleted or damaged by over-harvesting. These thresholds can only be established empirically by careful assessment followed by monitoring and evaluation of the health of the species over several years to ensure that harvesting is truly sustainable.

The growth habits and life cycle of the plant need to be known to assess how much harvesting and disturbance can be tolerated without the plant's population and ecology being significantly affected. After harvesting, regeneration should be monitored and compared with non-harvested control stands of the same plant in the same area.

This will require permanent quadrats to be marked out where regrowth and annual biomass (above ground dry matter) is compared between harvested and non-harvested plots. Each quadrat (100 m²) should assess the following parameters and recorded over three years on a data collection sheet. Three years is the minimum necessary to establish trends in changes in plant population following wild harvest.

QUADRAT YIELD:	DATA COLLECTION SHEET
Date	
Location	
Target Species (e.g. Helichrysum)	
Quadrat No.	
Treatment: Harvested/ non-harvested	
No. of plants per quadrat	
No. of target species plants per quadrat	
Clipping yield (g DM)	
No. of clipping this year	
Annual yield (above ground plant) g DM	

When these data is collated and analysed, the project will be able to determine the trends in plant populations between harvested and non-harvested plots and to adjust, if necessary, the wild harvesting protocols

Risk analysis and critical control points

The risk analysis and critical control points are designed to prevent over-harvesting or poor harvesting practices that threaten survival of the plant. This aspect is a central component of the sustainability protocols and the monitoring methodology, and is set up as a verification and validation mechanism of these sustainability protocols. To this affect it refers to and is based on all of the components:

Verification system

These risk based management system is a practical tool that attempts to address the conservation concerns, requirements of the ICS implementation, and those of external certification systems. Within this system the protocols must be constructed in a way that can be clearly interpreted by the communities involved. Using critical points along the production chain the quality of the final product can be improved if extension and management focus is directed at key critical points along the production chain, in what is referred as critical control production points.

At that point along the chain if corrective measures are not planned for in advance by the farmer or farmer group, then deterioration of quality can be observed, which directly affects the overall returns to the farmer. When harvesters understands the complete chain, he/she has the ability to plan in advance, possible eventualities or risks, establish certain standards that should be followed, thus has a better control of his/her production process and reward.

6. Recording systems

The process starts with harvesting and ends with the market. Working from the market perspective, quality attributes (in all dimensions) that consumers are interested in are identified before production starts.

- *Harvester groups*
- *Critical control points and sanctions*
- *Internal inspectors audits*
- *Harvest area and species lists*

Wild harvest record sheets

Once it has been shown that the harvesting is a commercial proposition and that wild harvest can be done sustainably, collectors should use recording sheets whenever wild plants are harvested.

Recording sheet for Sustainable Wild Harvest			
Botanical name			
Common name			

Location		:	
GPS coordinates		Altitude:	
Date:		Time:	
Weather:			
Parts harvested			
Daily yield (kg)		DM yield (kg)	
Distance from fields, settlements			
Handling methods			
Cleaning method			
Name of collector			

Example of an annual harvesting & activity calendar

Harvesting Area	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec
1.			X	X	X							
2.						x	x	x	x			
3.										x	x	x
Activity												
M&E		x	x	x	X	x						
Training sessions Harvester group leaders			x	x			x	x			x	x
Field officers, managers												
Internal Inspection			x									
External Inspection					X	x						
A1 Harvesting & Distillation	x	X	x									
A2 Harvesting & Distillation		X	x	x	X							
A3 Harvesting & Distillation					X							
Extension programme	x	X	x	x	X	x	x	x	x	x	x	x
Preparations for external certification			x	x	X							
External inspection						x						

7. Internal Control System (ICS) development

Under the organic certification mechanism, the harvesters will be responsible for maintaining the Internal Control System (ICS) which is a statutory requirement of the organic certification

standards form producer groups. The ICS is based on risk assessment, risk management and internal policing of the agreed risk management criteria.

There are specific sustainable wild harvest standards under organic certification. In general terms it follows the points made above. They differ slightly between the organic certification bodies, so it will be necessary to check the exact requirements of the standards once the certification body has been selected.

The Internal Control System (ICS) is a system designed for large numbers of producers and harvesters. It is a system in which all persons dealing with the product (harvesters/producers, agents, store keepers and processors etc.) are identified, registered, instructed on the requirements for organic certification and contracted to ensure compliance. The activities of these persons are then monitored in a system of regular visits and documented control. Besides this, the persons involved are made aware of their common responsibility for the product, which implies a certain social control.

In case of deviation from the standards, the ICS has defined rules on action to be taken. The responsibility for the implementation of the Internal Control System lies with Association/Co-operative. The ICS defines specific the responsibilities of each level in the project. It should provide for transparency, which is clearly documented so that the External Inspection Agency can easily understand and evaluate the functioning of the system. The personnel involved must be trained to perform their duties accurately. The ICS can utilise the traditional community leadership and existing co-operative system. Community headmen and co-operative staff can supervise the ICS in the key roles. The documentation required for the ICS is the basis for the traceability system for organic certification and for other purposes, as mentioned above. This type of recording system is also a fundamental requirement for managing any commercial supply chain.