

## Management of Non-Wood Forest Products

### Basic knowledge



The Management of Non-Wood Forest Products (NWFP) Module is aimed at all actors – such as local communities, the private sector, governments, traders and consumers – involved in the management, use and marketing of NWFPs. The module provides basic and more detailed information on the process of NWFP management, including planning, harvesting, marketing and trade.

The module also provides links to tools for NWFP management and case studies of effective management.

#### What are NWFPs?

Non-wood forest products (NWFPs) are goods of biological origin other than wood derived from forests, other wooded land and trees outside forests. They may be harvested in forests and agroforestry systems and from trees outside forests. Examples of NWFPs are foods and food additives (e.g. edible nuts, mushrooms, fruits, berries, bushmeat, herbs, spices and condiments, aromatic plants, and insects), fibres (e.g. bamboos and rattans), and medicines, cosmetics and cultural products (e.g. resins, gums and dyes). The table gives additional examples of various NWFP categories.

#### Categories of NWFPs

Category	Examples of material	Examples of end use
Food stuffs – plant-based	<a href="#">Fruits</a> , leaves, vegetables, <a href="#">fungi</a> , <a href="#">nuts/seeds</a> , berries	Food, oils, drinks, <a href="#">colourings and dyes</a>
Food stuffs – animal-based	Bushmeat, wild game, <a href="#">insects</a> , <a href="#">honey</a> , snails	Food, trophies
Medicinal	<a href="#">Medicinal plants</a> , herbs, spices	Medicine, <a href="#">flavourings, fragrances</a>
Animal fodder	Leaves, twigs	Fodder
Fibres	<a href="#">Rattan</a> , <a href="#">bamboo</a> , liana, cork	Construction, crafts, paper, clothing
<a href="#">Gums and saps</a>	<a href="#">Latex</a> , <a href="#">rubber</a> , <a href="#">gums</a> , <a href="#">resins</a> , chemicals	Chemical raw materials

#### NWFPs and SFM

Several million households of the world utilize and depend on NWFPs, primarily for nutritional, health and economic needs. It is estimated that 80 percent of the population in developing countries are utilizing NWFPs for these purposes in some way (FAO, 1997).

Most of them are women as it is they who collect and manage most NWFPs, even accounting for product, context and country.

In many countries, NWFPs are important components of forest product exports. Despite their real and potential value, however, most NWFPs are usually categorized as “minor” products of forests. NWFPs are often associated with traditional uses that are not widely known, or with poverty and subsistence. Transactions related to NWFPs largely take place in households and small-scale enterprises, mostly outside established marketing channels, thus forming part of an informal sector. For these reasons, NWFPs are often overlooked in forest management planning, leading to conflicts over resource use, for example where wood-harvesting interferes with the local production and harvesting of NWFPs.

The sustainable management of NWFPs, especially those occurring in natural forests, can be complex. Nevertheless, developing enterprises based on NWFPs can help increase the sustainability of forest management by increasing the range of forest benefits that accrue to local communities, who can often undertake gathering and processing activities themselves and consequently retain a greater proportion of the value of end-products, increasing their incentive to manage the forest sustainably. However, there are also examples of where the growth of markets for NWFPs has led to the degradation of forest resources or failed to help alleviate poverty or increase forest conservation (see [Cases](#)). Efforts to manage forests sustainably will continue to be hampered if NWFPs are not considered in forest management plans and practices and in regulations governing forest use. Forest managers need to understand the importance of NWFPs for the livelihoods of local communities and work with communities to promote the sustainable management of such products.

The sustainable management of NWFPs should take into account the interests of the various actors involved – such as local communities, the private sector, governments, traders and consumers – and ensure stakeholder participation in decision-making.

This is particularly true when it comes to women's involvement. Women are often excluded from decision-making processes on managing NWFPs, even though they are usually the people who are most affected.

### **Management of Non-Wood Forest Products contributes to SDGs:**





#### Related modules

- [Development of forest-based enterprises](#)
- [Forest inventory](#)
- [Participatory approaches and tools for SFM](#)
- [Silviculture in natural forests](#)

## In more depth

The process of NWFP management is outlined below.

### Resource management planning

Defining management objectives and strategies for NWFP. Three main criteria should guide forest managers and other stakeholders in setting forest management priorities: economic (e.g. financial viability); social (e.g. demand for forest goods and services, legal access, and traditional rules); and environmental (e.g. resource productivity and ecological suitability). A thorough review should be conducted of background information, such as existing studies, laws and regulations and previous management plans. Participatory appraisals should be conducted to draw on the experience of local communities.

Where there is only limited local experience in the management and production of NWFPs, a small set of NWFPs (no more than six) should be selected for initial commercial development on the basis of their economic, social and environmental suitability. Preference should be given to those products with established local or regional demand, because such demand is likely to fluctuate less than demand in newly developed international markets. Where possible, a “basket” of NWFPs and (potentially) wood products and environmental services should be developed over time to reduce the vulnerability of enterprises and communities to sudden changes in demand and prices for single products.

Other factors, such as the seasonality of harvesting and the availability of labour, should also be taken into account; seasonally complementary harvests of diverse NWFPs can help smooth demand for labour. Products with the greatest potential for local livelihood improvement – particularly for disadvantaged groups – should be prioritized.

### NWFP inventories

Various kinds of forest assessment can inform and guide the development and management of NWFPs. Approaches may focus on either:

- the NWFP resource itself, including its abundance or potential for future supply, through a resource assessment; or
- the use of the NWFP in the market, such as market or product surveys, biodiversity inventories (or species lists), and cultural studies.

Resource assessments can be carried out for both flora and fauna and may involve inventories of selected species, growth and yield studies, and the determination of maximum allowable annual harvesting levels.

(see Tools - [Resource assessment of non-wood forest products](#))

### NWFP harvesting

In general, the sustainable harvesting of NWFPs in natural forests follows close-to-nature principles. This means, for example, that wood harvests (where they occur) should be dispersed so that nearby forest stands are at different stages of recovery following harvesting and that mature and near-mature stands are also close to each other. Minimizing forest fragmentation in this way is likely to maintain greater species diversity and minimize the risk of losing NWFP species. To ensure that wood-harvesting can co-exist with NWFP harvesting:

- Management planning should aim to protect NWFP species.
- The planning of roads and skid trails for log extraction should accommodate and, where possible, facilitate the harvesting and transport of NWFPs.
- Local communities should be invited and encouraged to work with forest managers on pre- and post-harvest assessments to ensure that NWFPs and their local use are properly considered.

(see Cases - [Seminar Proceedings: Harvesting of NWFP, 2000](#))

### Domestication or cultivation of key NWFPs

*Domesticated or cultivated species refer to species in which the evolutionary process has been influenced by humans to meet their needs* (Convention on Biological Diversity, 1992). The domestication offers the possibility of increasing the productivity of certain NWFPs and reducing harvesting pressure on natural forests while increasing and reducing fluctuations in market supply. The domestication of wild forest species, however, usually involves a considerable investment of time and money, which may only be feasible where the product has a very high value and where social and political conditions are such that investors have a reasonable chance of obtaining good returns. Key steps that need to be taken to domesticate an NWFP include:

- the identification of key species;
- the collection of germplasm;
- the development of vegetative multiplication techniques or breeding schemes; and
- the integration of the NWFP (either vegetative or animal) in agroforestry or agricultural systems.

(see [Domestication and commercialization of NTFP in agroforestry systems](#))

### **Marketing and trade of NWFPs**

Forests and woodlands can be managed for subsistence or commercial purposes. In areas without access to markets, wood and NWFPs may still contribute substantially to domestic consumption and thus make important contributions to the food security of local communities. Nevertheless, enterprises based on NWFPs face many hurdles, such as a lack of access to finance, the dispersed nature of many NWFPs in a forest, the risk of depleting a resource on which local people may rely for subsistence, taxation systems and other administrative processes that are poorly structured for small-scale enterprises, a lack of access to markets, and a lack of harvest quotas.

Options to help increase the viability of enterprises based on NWFPs include:

- assisting small-scale operators to establish appropriate organizational structures such as cooperatives and user groups so that individual operators can pool resources to improve trade links and marketing and invest in the value-added processing of products;
- improving infrastructure for storage, transport and communication;
- undertaking research and development into the domestication of NWFPs; and
- providing training for staff, user groups and other stakeholders.

(See [Market analysis and development of forest-based enterprises](#)).

### **Certification of key NWFP**

The huge diversity of NWFPs discouraged early efforts to certify their management, but this has started to change – see, for example, the [fair wild standard](#), developed in 2010. The main selection criteria to determine whether certification should be pursued for an NWFP are as follows:

- The NWFP has an international market with considerable demand and involves a market chain with significant added value.
- The harvest is organized in a well-structured chain.
- The production of the NWFP is predictable, with well-known periodicity.
- The NWFP has high conservation value

(see [brazil nut, Bolivia](#) and [devil's claw, Namibia](#)).

### **Gender and NWFPs**

It is essential that the role women play in the NWFPs sector be recognized. While men tend to engage in the timber market, women rely on non-timber forest products both for their sustenance and as a source of income. There are various reasons why this sector is essentially female-dominated, but among them are that: (i) men are usually interested in more profitable activities; (ii) men have more access than women to national and export markets and to credit, while the market for NWFPs is mostly informal; and (iii) women are often in charge of household nutrition and have knowledge of edible NWFPs.

With the huge growth in demand related to natural health and beauty products, there could be enormous opportunities for women to benefit. In fact, over the past few years there has emerged a sizeable and growing domestic and international market for NWFPs. Nevertheless, social and economic constraints prevent women from earning participating in it.

Challenges arise for poor rural women because communities are often isolated, which means that women with limited opportunities to connect with markets have little access to useful information such as how much a consumer in the city or in developed countries will pay for the final product. In some cases, women typically have been found to receive less than 10 per cent of the final selling price.

Another concern, affecting both women and the biodiversity of the forests, relates to the overexploitation of NWFPs. Increased commercialization of NWFPs can result in overexploiting the resources, possibly creating a scarcity of goods for women, who are the poorest members of the community. Over-harvesting can also increase the danger of extinction, especially for medicinal plants. This could cause women to lose an important source of income. Women need support for livelihood diversification activities, but they also need to be included in efforts to alleviate pressure on wild and possibly endangered species (e.g. participatory domestication of NWFPs, where women are often left out).

It is very important for women to be included in forest planning processes. Governments and local authorities should conduct gender analyses to mainstream gender in their policies and to ensure they do not create disadvantages for women. Moreover, to gain influence in the process of commercializing NWFPs, women should organize into cooperative and producer groups.

Further detailed guidance and support the management of NWFPs may be found in the [Tools](#) and [Cases](#) sections of this module.

## Further learning

**Fakir, H., Dutkuner, I., Gürlevik, N., Sarikaya, O. & Babalik, A.** 2011 Abstracts book of the *2nd International Non-Wood Forest Products Symposium*, 8-11 September 2011, Isparta, Turkey.

**FAO.** 2007. [\*Tools to promote the sustainable use of NWFP? An assessment of trade related instruments influencing the international trade in non-wood forest products and associated management and livelihood strategies.\*](#) NWFP Working Document, No. 6. Rome, Italy, FAO. p145.

**FAO.** 1995. *Trade restrictions affecting international trade in non-wood forest products.* NWFP Series, Vol 8.

**Guariguata, M.R., Cronkleton, P., Shanley, P. & Taylor, P.L.** 2008 The compatibility of timber and non-timber forest product extraction and management. *Forest Ecology and Management* 256: 1477–1481

**Guariguata, M.R., Sist, P. & Nasi, R.** 2012. Multiple use management of tropical production forests: How can we move from concept to reality? *Forest Ecology and Management* 263: 170–174.

**ITTO & IUCN.** 2008. *Guidelines for the conservation and sustainable use of biodiversity in tropical timber production forests.* ITTO Policy Development Series No. 117. ITTO, Yokohama, Japan. p118.

**Marmillod, D., Villalobos, R. & Robles, G.** 1998. Hacia el manejo sostenible de especies vegetales del bosque con productos no maderables: las experiencias de CATIE en esta década. Turrialba, Costa Rica: CATIE. p14.

**Putz, F.E., Redford, K.H., Robinson, J.G., Fimbel, R. & Bate, G.M.** 2000. *Biodiversity Conservation in the Context of Tropical Forest Management.* The World Bank Environment Department. Biodiversity Series – impact studies, paper no. 75. Washington DC. viii + p80.

**Sabogal, C., Guariguata, M.R., Broadhead, J., Lescuyer, G., Savilaakso, S., Essoungou, N. & Sist, P.** 2013. *Multiple-use forest management in the humid tropics: opportunities and challenges for sustainable forest management.* FAO Forestry Paper No. 173. Rome, FAO and Bogor, Indonesia, CIFOR.

**Shanley P., Pierce A. & Laird S.** 2005. *Beyond timber: Certification of non-timber forest products.* Forest Trends – CIFOR . People and Plants.

**Shanley, P., Pierce, A. R, Laird, S.A. and Guillén, A.** 2002 Tapping the green market: certification and management of non-timber forest products. *Earthscan Publications Ltd.* 456p.

**Taylor, D.A.** 1996. *Income generation from non-wood forest products in upland conservation.* FAO, Rome.

**Ticktin, T.** 2004. The ecological implications of harvesting non-timber forest products. *Journal of Applied Ecology* 41: 11-21.

**Tobgay, S.** 2008. *Consultant report on developing a national strategy for NWFP development in Bhutan.*

## Credits

This module was developed with the kind collaboration of the following people and/or institutions:

**Initiator(s):** Christopher Muencke

**Contributor(s):** Paul Vantomme, Simone Rose, Cesar Sabogal - FAO, Forestry Department

**Reviewer(s):** CATIE; CIFOR

This module was revised in 2018 to strengthen gender considerations.

**Initiator(s):** Gender Team in Forestry

**Reviewer(s):** Giulia Muir - FAO, Forestry Department

