

See also: **Silviculture:** Managing for Tropical Non-timber Forest Products.

Further Reading

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Seasonal Greenery

A L Hammett and M A Murphy, Virginia State University and Technical Institute, Blacksburg, VA, USA

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Introduction

For generations, a multitude of non-wood forest products have been extracted from forests to supplement incomes and diet sources. Here we define non-wood forest products (NWFPs) as biological produce found in forests such as edible plants, medicinal and dietary supplements, decorative or floral products, and specialty wood products. Commonly collected edible forest products include mushrooms, herbs, and spices. Several plants are processed into medicines for household and local consumption and, more importantly for international markets. Decorative NWFPs include vines, ferns, and other plant products used for floral arrangements, dried decorations, and ceremonial or religious ornaments (**Figure 1**). Specialty wood products include handicrafts, carvings, turnings, utensils, containers, and crafts. For many landowners and forest dependent communities NWFP options diversify and complement traditionally timber-based forestry operations (**Figure 2**).

In the USA, Canada, and several European countries, the Christmas tree trade flourishes during the months leading up to the holiday season. Several



Figure 1 Examples of wreaths, boughs, and trees displayed for sale.



Figure 2 Example of a typical North American Christmas tree plantation.

countries have an emerging Christmas tree trade including Japan, Ecuador, and Mexico. Closely tied to this trade is the cutting and sale of seasonal greenery. Often the greenery is produced from branches or branch tips which are the by-products of pruning necessary to shape trees so they are ready for market. In many instances, greenery is collected by cutting tips of branches in natural or planted



Figure 3 Tree farmer trimming branches and shaping a Christmas tree.



Figure 4 Floral wreaths and boughs displayed for sale.

forests (Figure 3). These tips are fashioned into wreaths for hanging on doors or walls, tied in roping sometimes 20 m long to drape over doorways or along railings, and tied into short 60–120 cm swags to decorate rooms or lamp posts during the winter season. In North America and Europe, local and regional markets are well developed, readily accessible to local producers, and offer opportunities for adding value to forest resources (Figure 4). However, recently the South America and Asia regions have emerged as greenery producers and markets for Christmas trees and greenery products. Increased markets for greenery products warrant further examination for impacts on forest management and the potential for economic development.

History of Greenery Use

Since the use of seasonal greenery is tied to the tradition of the Christmas tree it is important to

review its history. The tradition of decorating a holiday tree began with Northern European tribes in traditional festivals and religious rituals to induce the return of the sun. The oldest record of Christmas tree use came from the early to late sixteenth century. A 1605 diary found in Strasbourg, France mentions a decorated tree, while in 1531 also in Alsace, there was mention of Christmas trees being sold in local markets and set up in homes. Several sources credit Martin Luther as being the first to decorate an indoor tree. He mentioned that after a walk through a forest of evergreens with shining stars overhead, he tried to describe the experience to his family and showed them by bringing a tree into their home and decorating it with candles. First evidence of a lighted tree appeared more than a century after Martin Luther's death in 1546.

Using greenery for holiday decorations is closely tied to the traditional Christmas tree. Greenery was brought into homes and places of worship as part of these ceremonies during the sixteenth century. Evergreens were the symbol of life because they do not die back over the winter – a feeling still commonly shared. Perhaps the first use of greenery documented was in Austria and Germany during the seventeenth and eighteenth centuries, where the tops of evergreens were cut, hung upside down, and decorated. The first holiday greenery use in the USA was in the German Moravian Church's settlement in Bethlehem, Pennsylvania during 1747. Wooden pyramids covered with evergreen branches were decorated with candles. The public display of decorated trees and seasonal greenery is now commonplace in several countries outside North America and Europe.

The Greenery Trade

Christmas trees are sold primarily in domestic markets as the trees are large, and difficult to keep fresh when shipping to distant markets in time for the Christmas holiday. The focus here is on greenery and greenery products, an NWFP that seems more suitable for more diverse and distant markets (Figure 5).

Holiday greenery products include wreaths, roping, door swags, and boughs or other hangings produced from evergreen or holly (*Ilex*) species. Some of these products are accented with dried flowers or cones, ribbons, or other decorative treatments. Since the whole tree is not harvested, greenery provides a seasonal source of income, while assuring the sustainable management of forest resources. Specialized greenery grown and harvested under forest cover in subtropical areas supports a large industry supplying accent material for floral



Figure 5 Example of decorated wreath and bough.

arrangements. For this article, we will concentrate on products that are produced from tips and branches of conifer trees – such as pine boughs – and assembled for Christmas and winter decorations.

Finding Greenery Markets

Greenery operations seem appropriate for small enterprises as the level of processing and marketing needs are low. Before starting a greenery enterprise one should first consider the size and location of markets. Visits to tree farms where raw materials may be gathered, trips to observe nearby and regional markets, and meetings with buyers of decorative products are important. It is important to note prices, sizes, how greenery products are assembled, appropriate decorative accents (ribbon, dried cones, etc.) that may be added to suit customer desires. The internet is increasingly a reliable source of information on products and competitors. Many small producers serve distant customers through website sales.

Planning for shipping is very important as greenery is perishable and needs to be delivered fresh. Producers need to harvest, stock, and transport their products in a timely fashion. Customers seek fresh (no needle drop) full-shaped greenery products in dark green colors. Labeling with species, care, and source information helps customers understand the product is high quality and fresh.

Once the holiday marketing season is over, leftover greenery stock often cannot be sold. To ensure extra greenery is not harvested some producers take advanced orders for club or civic organizations' fund-raising projects, and mail out brochures with order blanks or use a website to assure sales in advance. To help preserve freshness greenery products are often packed and shipped by express or

overnight services. One small producer in the Appalachian Mountains sends much of his production several hundred miles to the New York City market.

There are two common ways to sell seasonal greenery – direct to the customer or through wholesale channels to greenery-product producers. For producers willing to invest time to cut and make greenery products themselves, direct sales through mail or visits to Christmas tree farms are common. Direct sales are effective in helping to learn customers' needs and how to increase markets. Taking orders from customers in advance helps producers plan for labor, raw materials, and shipping arrangements, and customers can be assured of fresh, high-quality products on a promised date. Recently, agrotourism or other promotional programs have drawn urban customers to visit farms where they learn about forestry, cut their own Christmas tree or greenery, and see first-hand how greenery products are made.

Selling greenery in large quantities to wholesale buyers as a raw material is a viable alternative. For instance, several large wreath manufacturers buy in bulk from landowners, or will send a crew to cut greenery under harvest contracts. However, such production of large volumes takes careful planning considering tips should be kept cool and moist until used to make wreaths and other products. It is preferred to have a contract to protect the producer and the landowner.

Cultivating an evergreen plantation with the goal of harvesting seasonal greenery can be very productive, environmentally sound, and economically beneficial. These plantings may help reclaim fallow land, prevent soil erosion, provide buffer zones to agricultural and other land uses, and serve as excellent cover for wildlife. Greenery plantations often require only small initial investments for planting, annual care, and harvesting, and their management involves few tools and equipment common to agricultural enterprises. Clearly harvesting greenery for making wreaths, boughs, sprays, roping, and other decorative purposes is a viable, often profitable, forest-based enterprise.

Species Used for Seasonal Greenery

Cut greens constitute a large share of the decorative floriculture market. In the USA alone, yearly sales of cut greens are estimated at US\$2–3 billion. However, there are several countries that produce Christmas trees and seasonal greenery. The US-based National Christmas Tree Association has members from both Canada and Mexico as well as from Germany,

the UK, and Australia. Production in Germany, Denmark, and Mexico serves as an example of an ever-broadening forest products sector. A study by the Food and Agriculture Organization of the United Nations (FAO) of conifer-based non-wood forest products reviewed greenery production in these and other countries. In Germany, boughs are produced from noble fir (*Abies procera*) and white pine (*Pinus strobus*) in forests managed to produce both timber and Christmas boughs. Douglas-fir (*Pseudotsuga menziesii*) and Norway spruce (*Picea abies*) are planted with beech (*Fagus sylvatica*) in mixed plantations.

In Denmark, greenery is produced from Nordmann fir (*Abies nordmanniana*) and noble fir – both cultivated for ornamental foliage. According to the FAO, Denmark is the largest European producer, with an annual yield of 27 000 tonnes of ornamental foliage, exporting most of these products to Germany, Austria, Sweden, and the Netherlands.

Mexico has an important seasonal greenery market. The sacred fir (*Abies religiosa*), known to the people of Mexico as *oyamel*, *abeto*, or *arbolito de Natividad*, grows in forests at elevations between 2700 and 3400 m. Both the scientific name and the common name of this tree originated from a tradition of the Mexican people gathering the branches of this tree to decorate churches and homes during religious festivals. The greenery laden forests in the state of Michoacan are the over wintering site for the migrating monarch butterfly (*Danaus plexippus*).

The US greenery industry utilizes several evergreen species, each desirable and successfully marketed for different purposes. Depending on the location, growers may have a choice of species, producing a variety of products. Species most commonly harvested for greenery include long-needled pines Austrian pine (*Pinus nigra*), red pine (*P. resinosa*), Scotch pine (*P. sylvestris*), Virginia pine (*P. virginiana*), and white pine (*P. strobus*). In the central and northern Appalachian regions, white pine is desirable due to its vivid green color and ability to stay fresh for longer periods than other species. In addition to harvesting pine and spruce species for holiday greenery, northern white cedar (*Arbor vitae*), pond cypress (*Taxodium ascendens*), dwarf juniper (*Juniperus communis*), holly (*Ilex opaca*), dwarf mistletoe (*Arceuthobium pusillum*), and laurel (*Kalmia latifolia*) are also popular.

Pines are popular because they grow quickly, in a wide range of climates and on most soils, and they are more drought resistant than many other greenery species. Firs, as well as spruces, grow well further to the north in the boreal zones of the USA and

southern Canada. They have shallow roots and like the coolness and moisture content of north-facing slopes. However, several species that have early spring growth are vulnerable to late frosts.

Greenery production techniques are covered in more detail in several of the publications listed in the Further Reading section.

Opportunities for Income from Greenery

Greenery harvests provide interim income during the period between timber crops. Landowners can benefit from incorporating greenery production into existing activities. Greenery provides additional income from Christmas tree production, as pruning during shaping provides raw material for products such as fragrant Christmas and holiday wreaths, sprays, roping, and decorative centerpieces. As with other non-wood forest products, landowners may profit more from managing for greens and greenery products than from growing only Christmas trees. In addition, several other raw materials can be incorporated into greenery products. For instance, value can be added to corsages of evergreen when they are accented with a dried cone or berries, and then easily shipped to distant markets.

In Denmark, Christmas trees and greenery production are valued at US\$38 million year. Because of the wildlife habitat created in the plantations, hunting values are also enhanced. In one study, forest landowners' greenery production combined with hunting revenue produced more income than from timber harvested.

Value added opportunities abound. Small, plastic bags of evergreen tips can be sold to decorators. Some enterprising growers market do-it-yourself wreath kits. Each kit will include fresh greens, a metal ring, metal wire, a length of ribbon to add color, and a few pine cones with instructions to build a wreath.

In the past few decades, wholesale prices have risen in the US market for both decorated and undecorated wreaths. Decorated items with artistic detail demand higher prices. Hand-produced items would seem ideal products for developing countries to market to local tourist and export markets. Landowners in boreal and temperate zones could develop new products simply by adding plantations of greenery species.

Additional by-products from greenery production offer year-round income opportunities. Scented pillows and air freshener products are made with dried greenery such as very aromatic balsam fir (*Abies balsamea*). Some firms produce greenery extracts for medicinal and cleaning products.

Opportunities for Increased Greenery Production

A greenery plantation may not be limited to a rural setting. Some urban renewal programs are encouraging Christmas tree plots and income generation projects in large urban areas in the USA such as Detroit and Baltimore.

Those who do not own land may also participate in this potentially lucrative enterprise. Forest lands may be leased for cutting greenery, and cultivation of greenery species.

Greenery raw material may also be close at hand and readily available in unique ways. Some producers collect tips and branches from forest stands prior to a scheduled timber harvest. This raw material would be destroyed and wasted as a result of timber harvest operations.

Agroforestry operations should lend themselves very well to greenery production. Planting desirable greenery producing species with other timber species and agricultural crops may offer additional income sources and product diversity. Establishing a buying cooperative will help with initial raw material consolidation and quality control, and will facilitate economies of scale for processing. Pooling resources of small greenery producers may help them access remote markets.

For example, Christmas tree production and sales in Ecuador have grown recently. Greenery would be a natural complement to this industry and to the country's huge cut-flower export trade. Ecuador has increased its production for cut flowers that are exported to regional and distant markets. It seems that countries such as Ecuador could well benefit from complementary products such as greenery sold to the same markets.

Emerging Issues

For those countries with coniferous forests, harvesting greenery and other related NWFPs could prove very lucrative. For those areas where previous forest cover is degraded or removed, planting evergreen plantations with their potential benefits should be considered.

However, greenery production should not be considered by many landowners and communities. One emerging issue for greenery producers is fire safety. After natural greenery becomes dry and brittle, it is more flammable and the risk of fire increases. With adequate product labeling and chemical treatment during processing, this danger can be greatly diminished.

Partly as a result of the perceived fire risk, natural greenery now has competition from substitute

material. Some customers feel that the safety risk is enough to warrant purchasing flame-retardant greenery made of vinyl, metal, or other artificial materials. These materials can resist ignition and flame spread, perhaps have a 15–20-year lifespan, some are claimed to be made from recycled materials, and may be stored from year to year. However, their purchase price is higher, and they lack the natural aroma and ambiance so popular with natural greenery. There are now techniques that can preserve seasonal greenery extending its market potential.

Another problem is that the greenery business is labor intensive and sometimes not perceived to be equitable or fair. Many migrant workers move to high-production areas to make holiday garlands and wreaths, between mid-October and early December. During this heavy workload season, cutters climb trees and cut pine branches, which ropers feed into sewing machine devices that rope the branches together. Most laborers work for contractors who pay them piece rate wages, for each pound of pine branch limbs handled. In some cases it is alleged that operators do not pay adequate wages and hence can afford to undercut their competitors' prices.

See also: Plantation Silviculture: Multiple-use Silviculture in Temperate Plantation Forestry. **Temperate Ecosystems:** Pines; Spruces, Firs and Larches.

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