



## **An Update on the Economic Role of Hawaii's Landscape Services**

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While tourism replaced plantation agriculture as a mainstay of Hawaii's economy, landscape services became increasingly more important relative to agricultural production activities. A study by Barmettler and Prasad reported that in 1959 the state's landscape service industry included seven firms that generated \$900,000 of the sector's gross sales of \$1.4 million. Van Dam and Murdoch identified 24 golf courses on Oahu in 1975 and estimated that they spent about \$2 million to employ 292 full-time and 33 part-time landscape service professionals. Employment in Hawaii's landscape service industries from 1974 to 1985 grew at an average rate of 19 jobs a year, while employment in agricultural production industries declined over the same period at an average rate of 108 jobs per year (Cox and Hollyer 1989).

The upward trend in landscape service jobs is expected to continue. Employment for gardeners and groundskeepers is projected to increase by 130 jobs per year from 1998 to 2008. This accounts for 81 percent of the growth in the agriculture, forestry, and fishing sector for the period (Hawaii State Department of Labor

and Industrial Relations 2000). Currently, the 36 golf courses on Oahu and 77 courses statewide (Hawaii Department of Business, Economic Development and Tourism 2002) employ large numbers of landscape service professionals.

As Hawaii's economy has developed, landscape services have become more highly valued, while at the same time these services have become more integrated with other industries than farming and ranching. Cox and Hollyer (1989) found that the employment of the landscape service businesses was one-fourth as large as the employment of landscape service workers by firms in other industries. Thus landscape services are used by businesses in a variety of economic sectors (see Table 1); this makes determining the value and employment associated landscape services in Hawaii more complicated.

This publication presents issues associated with the collection of economic information on landscape services in Hawaii and updates the most recent figures on the value and employment for landscape services. This

**Table 1: The relationship between landscape services and sectors in Hawaii's economy**

***Landscape service providers***

Landscape architectural services  
Other scientific/technical consulting services  
Landscaping services

***In-house landscape services***

Golf courses  
Hotels  
Real estate management firms  
Governments  
Schools  
Cemeteries  
Private parks  
Other firms and organizations

information will help landscape service providers, government decision-makers, and community organizations understand the role that landscape services play in Hawaii's economy.

### Definition of landscape services

One of the major obstacles to the collection of accurate economic data on the magnitude of landscape activities in Hawaii and elsewhere has been the absence of a definition that clearly specifies what constitutes a landscape service. The Horticultural Research Institute and the National Gardening Association have defined *landscaping* as the planning, constructing, and planting of landscapes (Waldrop 1989). This definition, however, omits many landscape maintenance activities, such as tree trimming and lawn mowing. Cox and Hollyer (1988) provided a more comprehensive definition, defining *landscape services* as "the design, installation, and maintenance of a landscape," while defining a *landscape* as "a three-dimensional outdoor or indoor space that simu-

lates the natural outdoor environment and is arranged and/or maintained primarily to enhance human safety and enjoyment."

A relationship exists between the design, installation, and maintenance of a landscape. Design and installation are one-time costs, while maintenance is an ongoing cost that has a large labor component. The exact nature of the relationship is difficult to investigate due to quality variations and the lack of information on expenditure patterns. However, expenditures for maintenance costs account for a large majority of the spending for landscape services in Hawaii's economy (Cox, et al. 1991). The NAICS agrees with this definition.

Another difficulty in assembling accurate data on the value of Hawaii's landscape industry is that a wide range of businesses provide landscape services. Firms that sell landscape design, installation, and maintenance services as their primary business are not considered to be part of the "Agriculture, Forestry, Fishing, and Hunting Sector" in the North American Industry Classifica-

**Table 2. NAICS sectors that include landscape services.**

*Sector:* 54, *Sub-sector:* 541—Professional, scientific, and technical services

*Industry group:* 5413—Architectural engineering and related services

*Industry:* 54132—Landscape architectural services

*Description:* This industry comprises establishments primarily engaged in planning and designing the development of land areas for projects, such as parks and other recreational areas; airports; highways; hospitals; schools; land subdivisions; and commercial, industrial, and residential areas, by applying knowledge of land characteristics, location of buildings and structures, use of land areas, and design of landscape projects.

*Industry group:* 5416—Management, scientific, and technical counseling services

*Industry:* 54169—Other scientific and technical consulting services

*Description:* This industry comprises establishments primarily engaged in providing advice and assistance to businesses and other organizations on scientific and technical issues (except environmental). [includes Horticultural advisory or counseling services]

*Sector:* 23—Construction

*Sub-sector:* 238—Specialty trade contractors

*Industry:* 23899—All other specialty trade contractors

*Description:* This industry comprises establishments primarily engaged in specialized trades. The specialty trade work performed includes new work, additions, alterations, maintenance and repairs.

*Sector:* 56—Administrative and support and waste management and remediation services

*Sub-sector:* 561—Administrative and support services

*Industry group:* 5617—Services to buildings and dwellings

*Industry:* 56173—Landscaping services

*Description:* This industry comprises (1) establishments primarily engaged in providing landscape care and maintenance services and/or installing trees, shrubs, plants, lawns, or gardens and (2) establishments primarily engaged in providing these services along with the design of landscape plans and/or the construction (i.e., installation) of walkways, retaining walls, decks, fences, ponds, and similar structures.

tion System, United States Structure (NAICS); previously, under the Standard Industrial Classification Systems, these firms *were* part of that sector and were grouped together within it as the "Landscape and Horticultural Services Industry Group."

The NAICS places landscape service firms into different industry sectors (see Table 2). Landscape architectural and agricultural consulting services are listed under the sector called "Professional, Scientific, and Technical Services." Landscape installation services are considered to be part of the category called "All Other Specialist Trade Contractors." Landscaping and maintenance services are listed under the sector named "Administrative and Support and Waste Management and Remediation Services." A more detailed breakdown is listed in Table 2.

### In-house landscape services

Many other industries provide *in-house* landscape services. Examples of specific organizations that provide their own landscape services include visitor accommodations (hereafter referred to as hotels), golf courses, private parks (such as Waimea Falls Park), private schools, real estate management firms, cemeteries, and government agencies (Table 1).

The most recent information available is a 1990 study (Cox et al.), which estimated total employment

and spending for Hawaii's landscape services based on research involving primary data collection from across these industries. If the assumption is made that the industries have not grown or experienced structural change, which ensures that employment remained the same, then the spending figure can be adjusted to account for inflation and we can obtain a gross estimate of what the spending would be in today's dollars. Table 3 contains the inflation-adjusted totals and the employment estimates based on the study cited. The projections done by the Department of Labor indicate that the demand for landscape service workers has been increasing every year since 1990. These estimates here can be considered to be conservative, because no growth or structural change is assumed to have occurred.

The spending for landscape services in Table 3 is estimated to be at least \$490.2 million, and employment is estimated to be at least 9559 full-time positions and 1193 part-time positions. If the growth in the numbers of golf courses is accounted for using a simple ratio to adjust the totals, another \$17.5 million in expenses, 192 full-time positions, and 19 part-time positions can be included. However, all the golf courses are assumed to be requiring the same quantity and quality of landscape services as in the study cited, which may not be the case today.

If the spending for the new golf courses is added, the total spending for landscape services in Hawaii would

**Table 3. Total gross sales for landscape service firms and total expenses for in-house landscape services.\***

Group	Estimated total (millions of dollars)	Employment	
		Full-time	Part-time
<b>Total gross sales for landscape service providers</b>			
Landscape architects	12.55	150	26
Landscape contractor/maintenance	314.11	3539	487
<b>Total expenses for in-house landscape services</b>			
Golf courses	49.88	969	114
Private parks	18.98	288	63
Government agencies	28.82	969	0
Hotels	53.79	2278	192
Real estate management	4.83	1089	252
Private schools	4.25	181	45
Cemeteries	2.99	96	14
Total	490.2	9559	1193

\* Based on totals from Cox et al. 1990 that have been adjusted for inflation to 2002.

be estimated at \$507.7 million in 2002 dollars. While the traditional sources of economic information, such as *The State of Hawaii Data Book*, may attribute a large portion of this total to another industry, this spending occurs because people are interested in maintaining a three-dimensional outdoor or indoor space that simulates the natural outdoor environment to enhance human safety and enjoyment. Since the total overall farm value of diversified agriculture, sugar, and pineapple was estimated to be at \$521 million in 2000 (Hawaii Department of Agriculture 2000), the inclusion of landscape services would double the value of agriculture in Hawaii's economy. Clearly, the term "agriculture" is used here in a broad and general way, rather than as a strict industrial classification.

### Conclusion

Given the recent changes in the U.S. industry classification system, the value of landscape services is difficult to compile and track. Hawaii's Department of Labor and Industrial Relations classifies these services as agricultural services, while the Federal government does not. The skills needed to provide landscape services are taught in agricultural colleges across the nation, although the service provider may not be employed in an agricultural firm. Landscape services are an integral part of many industries because landscapes can enhance human enjoyment and safety.

The evidence presented here confirms that a developed economy increases spending on plants grown for aesthetic purposes. Landscapes cannot be imported from a lower-cost producer, which ensures that domestic production will occur. At the same time, landscapes are expected to provide many non-market benefits that cannot be valued in a marketplace (Cox et al. 1991). The view of a lush, green landscape can be enjoyed by all who view it, even though they are not charged for the privilege. As development progresses in Hawaii and around the world, more interest in landscapes for the purposes of enjoyment and safety is expected. Thus, agriculture services for the purposes of designing, installing, and maintaining landscapes are expected to become more integrated into various sectors of the economy, making an analysis of the economic value of landscape services more difficult.

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