

Technical and Economical Efficiencies of Producing, Marketing, and Managing Environmental Plants

I. STATEMENT OF THE PROBLEM

Often overlooked in the agricultural sector are agricultural products that enhance the quality of life either through aesthetic properties or environmental enhancing properties. In the last fifteen years in the United States, the production, marketing and maintenance of environmental plants has been a growing part of the agricultural economy. Yet, few resources have been allocated to research associated with the above. In fact, the USDA has one person who is responsible for collecting, analyzing, and disseminating economic information regarding environmental plants. Because of the limited nature of resources devoted to this research arena and the growing economic importance of this sector, it is crucial that research mechanisms be developed to assist producers and marketers of these plants to better ascertain opportunities and threats in the next five years.

II. JUSTIFICATION

The U.S. leads the world in the production and marketing of flowers, cut foliage, potted plants, bedding plants, turfgrass, and other nursery crops. These combined products have grown to be known as the "green" industry. The U.S. Green Industry continues to experience strong growth during the 1990's. According to USDA, grower cash receipts are projected to gain about \$400 million annually, or about 5 percent, through to the year 2000. This would result in receipts of \$12.8 billion in 2000 and \$15 billion in 2005. This is an increase from \$10.04 billion in 1994. This growth follows a decade of 10 percent growth in the 1980's. (Johnson, 1995)

Furthermore, the U.S. green industry is the second most important sector in U.S. agriculture in terms of economic output, according to a University of Georgia study that took into account the value of inputs purchased and from product handling, marketing, and distribution. It also revealed that, among the various agricultural sectors, the green sector is a major employer. Only the combined crop sector including vegetables, fruits, tree nuts, and hay and pasture employed more person-years in 1990 (Johnson, 1995).

The green industry is usually divided into the floriculture sector (which includes cut flowers, cut cultivated greens, potted flowering plants, potted foliage plants, and bedding and garden plants) and the environmental horticulture sector (which includes crops usually grown outdoors and used primarily for landscaping purposes). These plants include trees, shrubs, ground covers, turfgrass or sod, bulbs, and planting stock (Johnson, 1997).

In 1997, U.S. consumers spent \$16 billion on floriculture (\$59 per capita), which was the 12th highest in the world in terms of per capita expenditures on indoor flowers/plants. The leading countries with respect to per capita consumption of floriculture products are Japan, Austria, Belgium, Denmark, Finland, France, Germany, Netherlands, Norway, Sweden, and Switzerland (Johnson, 1997). Americans, on the other hand, are by far the leading consumers of outdoor landscaping plants. In 1997, U.S. consumers will spend \$37 billion on environmental horticultural products, or \$138 per capita. A robust economy usually generates increases in housing and other construction. This eventually leads to increased sales of environmental horticultural products, although there is usually a lag between sales of landscape plants and new construction. This lag can be anywhere from 6 months (Johnson, 1997) to 2 years (Gineo and Omano).

Landscape plant production has become a major sector within U.S. agriculture and is of major importance to farmers, rural communities, and consumers. In fact, greenhouse and nursery product producers generate the second highest (after vegetables) net value added per dollar of gross income among all agricultural commodities. Net value added provides a measure of agriculture's contribution to the general economy by emphasizing the income generated for all the people who contribute to agriculture production (Jinkins and Ahearn).

While better nursery data and data gathering procedures are needed by researchers and the industry, existing data sources indicate continuing industry growth, not only in the South, but nationwide (Johnson, 1990). Household expenditures on nursery products over the last 25 years appear to have been influenced by household income, the number of single family home construction starts, education levels attained, and age composition of the population (Gineo and Omano).

Many problems in the nursery industry relate to economic and environmental constraints. Environmental constraints revolve around water and soil quality, weather related stresses, and aesthetic and biological requirements. Economic constraints include changing resources, costs (such as land, labor and chemicals), and demand for landscape plants. Another important problem to be considered is the comparative advantages of producers in some regions of the United States. Aggregate data suggests that although the leading ten states' percentage of total grower cash receipts for greenhouse and nursery crops has remained stable (at between 65 and 70 percent) over the last 30 years, the composition of these ten states has changed (Johnson, 1990).

The regional/national approach available to this committee will continue to provide a connecting mechanism to permit the collection of primary data to conduct analyses on horticultural and economic problems facing the nursery/greenhouse industry. The collaborative approach is critical to the continuation of multi-state participation in the analysis and development of cost-of-production data for use in interregional competitive position analysis. Cost-of-production data must be generated in a consistent manner in each climatic zone of the United States for the interregional work to be valid. Likewise, the complexity and time required for the construction of production budgets for use in marketing analysis problems is such that a collaborative effort is essential. Unlike traditional agricultural crops, the landscape plant industry produces and markets thousands of different plants. Great care must be taken to select key plants that can suitably represent the cost of producing a group of plants with similar growth characteristics and requirements. Both a horticultural and economic perspective is needed.

While the previous S-103 regional committee (which was national in membership) provided the seminal cost-of-production work, the collection of primary data for marketing purposes is just as vital. Problems with the availability and quality of production and sales data exist to various degrees for all agricultural products, but the problem is most severe for landscape plant products. Data appropriate for use in market analysis studies must be collected by the researchers in a collaborative manner. Otherwise, there is no mechanism to organize, fund, and conduct surveys to collect information useful for interregional analysis.

With limited secondary data, a continuing and difficult question concerns judgements on regional growth prospects in the South as well as in other areas of the nation. The apparent regional advantages due to population shifts, climatic differences, lower resource prices, containerization, etc., are very important. The obvious implication is the prospect for continued growth within the entire nation. With increased growth projections, production and marketing of landscape crops provides an alternative for some farmers that have produced traditional agricultural crops, e.g., corn, cotton, soybeans, tobacco, and vegetables. The evaluation of this potential in terms of individual firm adjustments, structure of the industry, and future

technological possibilities should benefit not only nurserymen and consumers, but also the entire southern economy as well as other areas of the nation involved in trade interrelationships. Insight regarding potential growth in demand and adjustments in sources of supply will permit the more efficient allocation of resources over time, which is a critical component of a market-oriented, competitive industry.

Research is needed to ascertain the potential of the landscape industry to provide jobs and business opportunities to agriculturists displaced by the shrinking number of farms in traditional agriculture. Extensive expansion without regard to regional and national supply and demand for landscape plants could result in instability in the landscape industry and the misallocation of resources. Also, the benefits to consumers and the overall environment should be positively impacted by the expansion and further development of society's aggregate demand for landscape plants. Continued nationwide growth and expansion of this industry should benefit society in general because of the improvement in the environment from an aesthetic perspective as well as from the perspective of adding living plant material to our cities and communities where various forms of pollution are apparent.

Collaborative research on the production, marketing, and managing of landscape plants should provide insight regarding the relocation of production of certain species as competitive advantages in the production and/or marketing of these plants are identified. Insight regarding these long-run economic forces would permit researchers, extension workers, and other individuals working with the industry to more efficiently plan the reallocation of these resources than if these long-run economic forces are not identified in advance. In other words, the research may provide insight regarding these adjustments so that in some cases nurseries may be forewarned about the risk of investing for future expansion that may really be destined to relocate to another production area. The possibility of this insight exists with all economic analysis regarding sources of supplies of products.

The research proposed in this project statement coincides with the mission of the Cooperative State Research, Education, and Extension Service (CSREES). This mission is "to achieve significant and equitable improvements in domestic and global economic, environmental, and social conditions by advancing creative and integrated research, education, and extension programs in food, agricultural, and related sciences in partnership with both public and private sectors." Furthermore, the proposed research in this project statement supports goals 1, 4, and 5 of the Strategic Plan developed by the CSREES (Goal 1 - an agricultural production system that is highly competitive in the global economy, Goal 4 - greater harmony between agriculture and the environment, and Goal 5 - enhanced economic opportunity and quality of life for Americans). The cooperation of horticulturists and agricultural economists from around the United States that comprise the S-103 committee offer a unique resource to examine economic and environmental issues.

While the research work that focuses on the production-marketing system will contribute to the overall efficiency of the industry, much of the research will contribute to the applied sciences. Research dealing with new technology and the application of these technologies contribute to the base of scientific knowledge that may lead to application in other horticultural areas, such as vegetable production. The work planned on biological control of insects, water-efficient pelletized container production systems, water holding capacity of various potting media, and alternative irrigation systems will contribute to the advancement of science. This water-related research will also contribute to the number one research area identified for the Southern Region by the Southern Association of Agricultural Experiment Station Directors in the August, 1992, report entitled Southern Strategic Research Plan.