

Penn State **Extension**

How to Get Started in Landscape, Lawn, Nursery and Greenhouse Businesses & Succeed

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This guide will assist you in starting an exciting and rewarding career in the Green Industry: landscape, lawn, nursery and greenhouse businesses. There are widely different requirements for expertise in the Green Industry, and hard-working individuals can find success relative to their background/skills and available resources. Any new business needs a business plan to demonstrate that there is a market in your area for your product/service that is not being fulfilled. A business plan focuses your efforts, and is also required by lenders if you need financing. Detailed planning, especially in regard to financing for both start-up costs and cash flow for at least the initial years, will increase the probability of success.

First, there is a general section applicable throughout the Green Industry on the development of your business plan. Then specific sections identify needs within those sectors of the industry including: landscape maintenance; landscape installation and maintenance; landscape design; lawn services; nursery production; and greenhouse production. There is some crossover in businesses that will deal with more than one sector. Each of these sectors and the requisite needs can be combined as necessary.

A successful business needs to have several key elements for success. Rutgers University reviewed and identified these elements for landscape contractors; however, they also apply to other Green Industry businesses. According to Rutgers, there are six key elements of success for landscape contractors: effective leadership, creating a business plan and strategy, understanding production and overhead, managing employees and making them accountable, production feedback via job costing, and implementing change. To these add more effective marketing and networking and organic land care (sustainability, stormwater management). Remember that only 56% of new businesses are still viable after the first 3 years. A well thought out business plan can help you be one of the success stories.

General Start-Up Guidelines for the Green Industry: The Business Plan

Start with a comprehensive business plan to focus your efforts and resources. This is not a static document, but an ongoing review of your business and should be updated annually, or as needed, for any changes. Consult with the Small Business Administration www.sba.gov, a financial advisor, and an attorney. A sample business plan template is available as a guide at <http://app1.sba.gov/training/sbabp/bptemplate.pdf>.

A business plan will be as detailed as the products and services you offer. Most business plans will address the following:

Company Profile

Provide the description (name, principals, goals and objectives, background), mission (business) and vision (growth, ideals) statements. Decide if you will buy an existing business or build one from the start.

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A healthy on-going business can have major advantages of location, equipment, customer base, and financial history. A franchise can provide information, equipment access, ongoing assistance for problems, and marketing. Be aware that existing clientele may leave the newly acquired business causing the cost of purchase to take longer to pay off. Always consult with your financial advisor, attorney and accountant prior to purchasing or starting a business.

Business Industry Market and Trends

Describe the industry and how you plan to function in it. Include a market analysis (past, present and future locally) with an estimate of your projected market share; identify trends and clientele needs; regulations (current and upcoming); competitors (who they are and what they are selling); your niche (local, regional, national); a profile of your customers; and your qualifications. It helps to belong to one or more professional organizations. There is much value in first working in businesses similar to the one you eventually want to start.

Description of Products and Services

List all of your products/services; include pricing/fees (overhead, labor, materials, profit) and indicate how these are calculated (hourly, monthly, project, square feet, materials). Include how these are competitive in your market. Photos and brochures can be placed in the Appendix section.

Organization and Management (Operations)

Describe the legal structure of your business (proprietorship, partnership, corporation, etc.); provide a company organizational chart and biographical information for each key manager; indicate staffing (seasonal or year-round, temp agencies, subcontracting); note a commitment to ongoing education in order to maintain and enhance staff skills and knowledge (formal, informal, trade shows); identify necessary or special licenses and/or permits. In Appendices – briefly note applicable laws, regulations and business records specific to the industry.

Licenses and permits include: the Federal Employer's Identification Number, PA Contractor's Registration, Contractor's Bond (to protect clients against substandard work), Seller's Permit (to collect and remit sales taxes), and business licenses (from each incorporated city or from the county where business is conducted). Note many businesses also need someone who has a pesticide applicator's license which requires an examination.

Marketing and Sales

Strategy is defined with promotional efforts focusing on how the product/service will benefit the purchaser, and may include personal contacts and the development of a network. Begin with face-to-face contact, then phone calls, e-mail, social media, and internet. Your contacts/networks depend on the clientele. Residential prospects are generated by community connections and word-of-mouth referrals. Commercial leads are produced by bidding, business-to-business referrals and government contracts. Important considerations include: placement (distribution); services (as a contractor or self-contractor); and products (via wholesalers, retailers, brokers, cooperatives, plant societies) with their

sources, and selection of the best products to start with (price and efficacy). Maintain a database of clients to contact directly, including their purchases of products/services, customer relations and payment history.

Financial Management

Earning money starts with setting up an accounting system [single-entry or double-entry, cash or accrual]. The plan includes: initial expenses (start-up funds and sources), operating budget (fixed and variable expenses), cash flow projections (noting seasonality changes), income assumptions (handling client payments and avoiding delinquent accounts), asset management and estimated return on investment (ROI).

Sustainability

While sustainability is a new “buzzword”, it is genuinely important to all businesses. It covers environmental stewardship (land, water, stormwater) and community relationships and support. A sustainable business is based on common sense, moderation, fair dealings and endurance. Before you make a decision to start your business, you must decide how your schedule will work around other employment (if applicable), school, and family.

***A business should have a triple bottom line:
money (profit), people (social responsibility) and planet (environmental protection).***

Appendices will include those noted above and other references, market studies, licenses, certifications, business forms, resumes and references from other businesses and community leaders.

The **Table of Contents** and **Executive Summary** are written last, but will appear at the beginning of the business plan. Keep your executive summary short, less than two pages, and enthusiastic. Remember that you may be marketing this to investors.

Starting a Landscape Maintenance Business

Buy or Build Own: Those who purchase an existing business need to examine existing maintenance contracts and accounts. The price should be about 3-4 times the monthly gross plus the value of equipment and inventory. There may be some concern over purchasing franchises to start your own business in that they may or may not be worth the extra cost. <http://www.franchiseopportunities.com/> Building your own landscape maintenance business is the more common practice.

Market and Trends: Decide what clientele you will serve - residential, commercial, or both, and the services you will offer. Use systems and operations planning to increase efficiency and reduce waste. Identify any niche area that you could cover successfully (planning, design, coordination, installation). Decide whether you will focus on large jobs (new landscapes, estate maintenance and renovation, public properties), small jobs (single tree installation, small garden installation, or container flower designs), or a combination.

Residential clientele include those who aren't able to/don't want to maintain their own landscapes, who are selling a home and need curb appeal, who are frequently out-of-town, who are retirees, or who own more than one residence.

Commercial clientele are rental property managers, facilities managers for public/private properties or privately held commercial businesses.

Your Qualifications: A successful business requires you to have adequate technical and business background acquired through education and experience. The technical knowledge and skills should include soil improvement (composting, fertilization, liming), irrigation/drainage management, proper mulching, preventative maintenance, moving established plants, pruning, design, lawn care and lighting, understanding and management of pests/diseases/injuries of plants, weed management, winterizing a landscape, safety for pesticide/tool/equipment use, tool and power tool maintenance. Business knowledge and skills should include how to write specifications, price work, and write contracts. All professional certifications are useful.

Description of Services: Decide which maintenance services to provide. These can include work on trees, shrubs, flower beds, vegetable gardens, orchards, lawns, etc. Special services such as arbor care with diagnosis, treatment and possibly removal expand your repertoire. New options such as synthetic grass maintenance may be popular in your area. Delivery of bulk materials (soil, sand, rock, mulch) can be profitable and extend your season. Off-season work may include snow/ice removal, firewood delivery, interiorscaping, Christmas/holiday lighting and displays.

In general, a landscape maintenance business requires the least upfront capital investment and is relatively easy to start, compared to many other businesses.

Pricing is determined by your market; generally charges are fixed by month/season/year or by visits. The average fee charged to clients per month is \$110, maximum clients a single proprietor could handle is

30-60. Therefore, by charging \$60/visit, at 36 visits/year, having 30 clients would yield a net profit of over \$40,000.

Organization and Management: Follow the general Green Industry guidelines for the maintenance and enhancement of knowledge/skills through ongoing education and maintaining licenses such as pesticide applicator or arborist.

Equipment/Supplies will be needed and capital expenditures include the purchase of equipment and durable goods for work. Chemicals (fertilizers, pesticides) and plants can be purchased at a landscape wholesale supplier. Decide which equipment and tools you need to buy and which you can rent. Standard equipment to have on-hand is a power mower, trimmer, blower, backpack sprayer and chain saw. Heavy equipment may be bought or rented and includes a tractor, backhoe, front-end loader and ditch witch. The biggest initial costs are for a truck, trailer (~\$1,400), commercial mower (~\$1,300), and other equipment. Tools needed include: hoe, shovels (round point blade, square point blade, trenching), mattock, dibble, bars (tamper, pry, digging), pruners (bypass, anvil, cut and hold), pruning saw, broom, landscape rake, PVC pipe cutter, pipe wrench, measuring tape, gloves (leather, work, latex/vinyl), hack saw, wire cutters, screwdrivers (flat-head, Phillips, cordless), sledge hammer, garden hose, hose sweeper nozzle.

While you may start with home landscape maintenance equipment/tools/supplies, in many cases the commercial grade will last longer and be more effective.

Marketing and Sales: How you market will be determined by your clientele and the services you will be providing. A high-tech (internet) and low-tech (personal) approach is beneficial, especially when incorporated into a cohesive marketing plan.

Financial Management: Rutgers estimates that there are 20,000 landscaping businesses in the US and 80% of the new companies are out of business within 5 years. The number of actual businesses is likely higher than this due to individuals who work informally and on a cash only basis. According the U.S. Department of Labor, 1 out of 6 landscapers work part-time. See the Occupational Outlook Handbook for more information - <http://www.bls.gov/oco/home.htm>

Sustainability: All aspects of the Green Industry are the original “green” businesses and the sustainability movement can provide substantial support to your business. You can choose to have a business that incorporates Integrated Pest Management or only organic methods.

References:

LeBeouf, Jason Jeffrey. *Landscape Maintenance Company Exploratory Study*, California Polytechnic State University, December 2010.

<http://digitalcommons.calpoly.edu/cgi/viewcontent.cgi?article=1055&context=agbsp&sei-redir=1>

Starting a Full Scale Landscaping Business - Installation and Maintenance

This includes everything listed under “Starting a Landscape Maintenance Business” as well as the following.

Buy or Build Own: “Full Scale Landscaping” firms are generally larger, often developing from a business that was originally maintenance only. To purchase one would require a significantly larger investment than the purchase of a maintenance only business.

Market and Trends: Businesses of this size may compartmentalize: part of your business may maintain residential and commercial properties, while another may only do installations or other specialized work on either type of property.

Your Qualifications: A successful business will require both technical and business background acquired through education and experience. The technical background needed for “Full Scale Landscaping” is much greater than for maintenance alone. It should also include: selecting plants for site conditions (trees, shrubs, perennials, annuals, bulbs, lawn grasses); landscape design and use of design software; protecting plants in transit; proper planting technique; materials and labor calculations; use of tools/equipment for installation services; and maintenance of irrigation, hardscape, and water features. Technical background may be required for installation of: irrigation systems, pavers and walls, water features, and fencing and decks. Similarly, the International Society of Arboriculture (ISA) and Leadership in Energy and Environmental Design (LEED) certifications are especially useful.

Your business will need to include more detailed contracts and specifications than for a maintenance only business.

Description of Services: Decide which maintenance and installation services to provide. Most businesses include basic lawn and landscape services. Others may include, or even specialize in: irrigation, hardscape, water features (fountains, waterfalls, backyard ponds) or synthetic grass installation. Some businesses choose to do installation only with no maintenance.

“Full Scale Landscaping” requires more upfront capital investment and a larger capital reserve, than the “Landscape Maintenance” business, but also offers more growth potential. Pricing is frequently done on a project basis, with or without a continuing maintenance contract.

Organization and Management: Follow the general Green Industry guidelines, with regard to ongoing education in order to maintain and enhance knowledge/skills. You may need to maintain a landscape architect license, along with other licenses. Those involved in installation only may not need a pesticide applicator’s license, but may still need an arborist license.

In “Full Scale Landscaping”, you will be spending more time with employee issues, management and management structure which are more complex than for a “Landscape Maintenance” business.

Equipment/Supplies include those elements for “Landscape Maintenance” plus additional equipment/supplies, with a greater cost/benefit in favor of purchase rather than rental for more

equipment. Additional useful equipment includes: a tree planter, tractor, sod-cutter, trencher, backhoe, excavator (mini and/or full size). If you choose to install irrigation or perform other specialty work, other applicable equipment/tools are needed; in this case the cost/benefit for purchase rather than rental may be more complicated. When in doubt about rental or purchase, it is generally better to rent. This option protects cash flow and allows time for the evolution of the business.

Marketing and Sales: This is similar to “Landscape Maintenance” if you are doing both installation and maintenance. If you focus more on landscape installations, then marketing efforts will need to be more intense as the need for new business is greater compared to retaining the repeat maintenance business.

Financial Management: As the capital outlay for full scale financing becomes more complex, you may need to have a physical storefront for this type of business as well as a payroll accounting system, either in-house, or outsourced.

Sustainability: A “Full Scale Landscaping” business has a greater effect on a sustainable environment by the nature of the plants chosen; how landscapes are graded and stormwater managed; and how pest and disease problems are managed proactively.

References:

Dines, Nicholas, and Kyle Brown. *Time-Saver Standards Site Construction Details Manual*, McGraw Hill Professional, 1998.

R.S. Means Co. ed. *RS Means Site Work & Landscape Cost Data 2011*, R.S. Means Company, Inc.

Stryker, Jess. *Landscape Irrigation Installation Tutorial*, Jess Stryker’s Basic Tools - <http://www.irrigationtutorials.com/instal10.htm>

VanDerZanden, Ann Marie, and Thomas W. Cook. *Sustainable Landscape Management, Construction, and Maintenance*, Wiley, 2010.

Vandevliet Marcus, “The 6 Key Elements of Success for Landscape Contractors”, Rutgers University <http://www.cpe.rutgers.edu/courses/current/al0306ca.html>

Starting a Landscape Design Business

Build Own: These businesses strongly follow the reputation of the designer or their design group so they are usually built up as new businesses.

Market and Trends: More than most, this type of business provides the opportunity to select both the types of clientele to work with (commercial, community and/or residential) and individual clients. Some landscape designers choose to specialize on a specific type and size of project.

Your Qualifications: A successful business will require you to have both technical and business background acquired through education and experience. Most successful designers have degrees in horticulture or landscape architecture. Skill in design involves art and science. Understanding and interpreting client needs is critical to a good design so that it is functional as well as beautiful. Skill and knowledge of drawing, elevations/views, design principles and computer aided design (CAD) are important. The cultural needs of plants must be considered, the right plant for the right site, as well as the “art” of blending colors, textures and masses in a cohesive and pleasing way. Often hardscapes are included in the design and knowledge of the available materials, along with the advantages and disadvantages of each, is needed. Skills in site analysis, developing base maps and creating/reading blueprints are needed. A thorough understanding of landscape maintenance and construction, along with material costs and labor time/costs is required. CAD experience is useful in both design and marketing.

Your business background should include detailed contracts and specifications. It is also important to be confident when presenting your design proposal to clientele.

Description of Services: Decide which design services you will provide. Some businesses will choose to do design only while others will be “Design and Build” firms (see “Full Scale Landscaping”).

If you choose a “Design Only” business, your start-up costs can be relatively low and you can operate from your own home. You would meet clients at their residence or business for site visits, and then prepare plans at your home.

Businesses differ in charging an initial consultation fee, an hourly fee, and/or project fees.

Organization and Management: Follow the general Green Industry guidelines, with the need for ongoing education to maintain and enhance knowledge/skills. You may be maintaining a landscape architect license, along with other licenses. Those involved in design only would not need a pesticide applicator’s license or an arborist license.

Equipment/Supplies for “Design Only” would primarily be office materials, computer and software, drafting table and supplies, possible scale models. For a “Design and Build” firm, they would also need materials as for a “Full Scale Landscaping Business”.

Marketing and Sales: This will primarily involve obtaining new clients, although some repeat business can be expected with larger projects or wealthier clients. It is important to keep a high profile in the community and apply for landscape awards for your designs. Much of the new work will be by referrals.

Collaborations or networking with other Green Industry professionals can generate new business contacts and potential clients.

Financial Management: The capital outlay is relatively low; however, regular cash-flow needs to be maintained through ongoing new projects year-round.

Sustainability: Here you can have even more effect on a sustainable environment through the plants that are chosen, how landscapes are graded, how stormwater is managed and how pest and disease problems are managed proactively.

Starting a Lawn Services Business

This is similar to “Starting a Landscape Maintenance Business”.

Buy or Build Own: See the section on “Landscape Maintenance” business, although franchise opportunities here are relatively common.

Market and Trends: These can be residential, commercial or community accounts; you can cover one or more, as you prefer. Large jobs, or a greater number of jobs, will usually require more employees and equipment and a sophisticated logistics system to maximize transportation, equipment and labor efficiency.

Your Qualifications: A successful business will require you to have both technical and business background acquired through education and experience. The technical background should include: soil improvement (including composting, fertilization, liming); irrigation/drainage management; preventative maintenance; how to renovate/install new lawns; understanding of pests/diseases/injuries of turf and how to manage them; weed management; safety for pesticide/tool/equipment use; tool and power tool maintenance. For the business background include how to write specifications, price work, and write contracts. A professional degree or certification is useful.

Description of Services: Decide which services to provide, standard services include: mowing, soil testing, fertilization, sodding/seeding, leaf raking/removal, IPM (integrated pest management), weed management, aeration, and seasonal cleanup. You can also do installation of new lawns or underground sprinklers. Sprinkler installations can include ongoing winterizing and maintenance.

In general, a turf maintenance business has a minimal upfront capital investment and is relatively easy to start, compared to many other businesses. Pricing for maintenance is as for “Landscape Maintenance” and is generally done by month/season/year or by individual site visits.

Organization and Management: This follows the general Green Industry guidelines, with the need for ongoing education to maintain and enhance knowledge/skills and maintain licenses such as a pesticide applicator’s license.

Equipment/Supplies will be needed as part of the business including capital expenditures for equipment, as well as durable and expendable goods for work. Chemicals (pesticides, fertilizers) can be purchased at a landscape wholesale supplier. Decide which equipment and tools you need to buy, and which you can rent. Standard equipment to have on-hand (multiple units of each) includes – power mower, edger, trimmer, blower, chain saw. The biggest initial costs are for equipment; truck, trailer (~\$1,400), commercial mower (~\$1,300), and other equipment. Tools needed include: broom, landscape rake, PVC pipe cutter, pipe wrench, measuring tape, gloves (work, latex/vinyl), hack saw, wire cutters, screwdrivers, sledge hammer, garden hose, and hose sweeper nozzle.

While you may start with home lawn maintenance equipment/tools/supplies, in many cases the commercial grade will last longer and be more effective.

Marketing and Sales: How you market is determined by your clientele and the services you provide. A high-tech (internet) and low-tech (personal) approach is beneficial, especially when incorporated into a cohesive marketing plan.

Financial Management: Annually there are many new lawn businesses, only a few of these will be sustainable businesses long-term. A well thought out and implemented business plan can increase your success.

Sustainability: Horticulture, Green Industry – these are the original “green businesses” along with Agriculture in general, and this concept can be part of your marketing. You can choose to have a business that incorporates Integrated Pest Management (IPM) or one that is managed completely organically. Some of the newer lawn care businesses are organic, which requires greater knowledge and skill to perform successfully, although it is an upcoming niche market.

Starting a Nursery Production Business

Buy or Build Own: The first decision is location. Second, decide if you will buy or build. If you build your own nursery, you have more land selection and layout control. The size of the operation can vary from less than an acre to a thousand or more.

Land selection starts with location and access to transportation/labor. Look for less than a 5% slope, quality of soil (nice sandy loam, good depth, well-drained, good pH for crop, few rocks), good sun exposure, water quality/quantity/reliability/availability [ideal <175 ppm soluble salts (range 175-525 ppm), Na levels <35 ppm (range 20-40% total salts)]. Know all applicable considerations regarding your land prior to purchase, including any chemical or biological contaminants, stormwater management, local laws, environmental issues and the history of the land use.

Clientele depends on the type of nursery. According to Appropriate Technology Transfer for Rural Areas (ATTRA), container-grown crops generate about 10 times more sales per acre than field crops. Most (80%) garden center clientele are from a 5-15 mile radius. Over 60% of a wholesale nursery's sales are to customers within the state. Small nurseries sell about 20% to out-of-state. Retail nurseries sell 1-3 gallon containers; landscapers usually want 3-5 gallon containers and balled and burlapped plants (B&B). Nurseries are very dependent on having high levels of new local/regional construction and low unemployment rates, see ATTRA's Sustainable Small-Scale Nursery Production, Steven Driver and Lane Greer, 2008 <https://attra.ncat.org/attra-pub/nursery.html>

A good nursery and business layout can improve growing conditions and provide the most efficient workflow. An automated irrigation system is needed.

Market and Trends: Choose what type of market you are serving: Retail, Wholesale, Landscape/Retail, Farmers' Market, or Mail Order/Online.

Choose your type of production: propagation (seedlings, cuttings, grafts), field production (ball and burlap, bareroot), pot-in-pot production, or container production.

Decide whether to grow on speculation or by contract, or your preferred percentage of each.

Your Qualifications: A successful business requires you to have both technical and business background acquired through education and experience. Substantial knowledge about a wide range of subjects is required, often from both a horticulture degree and from experience. This includes: the length of time to a marketable crop for each plant and scheduling for the number of each plant in the first and subsequent years for different pot sizes; runoff from irrigation water and possible chemicals; integrated pest management (IPM) practices; best container type for each crop [black plastic, light colored plastic, copper, bottomless, tubes (bottomless), pot-in-pot (holder pots have a 15 year life-cycle)]; weed control (herbicides, bioherbicides, cultural, fabric weed barrier disks); fertilization; potting media for each crop. Field production requires soil management [for better soil structure, fertility, organic matter (OM, including cover crops, mulches, living mulches)]; beneficial insect management; and weed management.

Overall, you need to know how to start the crop, grow it to sale, then how to handle and ship it post-harvest.

Substantial business acumen is also important, along with human resource management skills.

Description of Products/Services: Nurseries provide products and the specific product mix is a major decision for your business. If you decide to offer landscaping services as well, you need to incorporate the information for that as well in your business and service plans.

Often nurseries, both start-up and mature ones, buy “starts” or young cutting or seedling plants from specialist growers and grow them to larger sizes in containers or fields. The products you can offer include trees, conifers, perennials, vines, shrubs, bulbs, annuals. Many nurseries specialize as niche markets, which can work well even for small growers.

Organization and Management: As a production business, there are more concerns with land, buildings, specialized equipment, irrigation and possibly shipping.

Equipment and supplies: tractor, trailer, tree planter, excavator, pot-filling machine, soil-mixer, fertilizer injector system, ditch witch, PVC or drip irrigation equipment/supplies, pesticide applicator equipment/supplies, propagation house equipment/supplies (when doing own propagation), chemical and tool storage areas, truck(s).

Irrigation systems must provide a uniform amount of water to all plants as needed. This is complicated by different species, plant sizes, container sizes (if applicable), and water requirements. Automation is useful in monitoring and providing irrigation. Cyclic irrigation, providing equal amounts of daily water needs in 3 or more applications/day, produces better growth with less runoff/leaching (goal is <20% leaching). Potting media and container design can also help with water needs.

Drip or trickle irrigation use much less water while producing healthier plants than overhead irrigation. Sandbeds or capillary beds are a less common option. Regular monitoring of pipes and emitters in trickle irrigation is needed for reliable water distribution. Runoff is a consideration environmentally and many areas have regulations on this.

While most labor is needed in fall and spring, you can increase the sales time frame and reduce layoff time for seasonal and part-time personnel. This time frame can be extended by adding fall crops which would be started in the summer and by having a Christmas holiday crop. Some add other service related businesses as indicated in other sections.

An additional license required in Pennsylvania is the Plant Merchant Certification from the Pennsylvania Department of Agriculture. See www.agriculture.state.pa.us for more information.

Shipping – USDA resource guide

<http://www.ams.usda.gov/AMSV1.0/ams.fetchTemplateData.do?template=TemplateA&navID=AgriculturalTransportation&leftNav=AgriculturalTransportation&page=ATAgriculturalTransportationHome&acct=>

[AMSP](#) It's best to use your own trucks if delivering locally. For wider distribution, refrigerated trucks are temperature controlled and can reduce losses.

Marketing and Sales: Retail and landscape nurseries rely on a large nearby clientele base. Wholesale nurseries have a much wider potential market area, some distribute product nationally.

It is very important to keep current on market trends, and legal and regulatory issues (including fertilizers, pesticides, stormwater management, and invasive species) which also affect public relations and community support.

To determine the market mix, start with about 80% of commonly grown plants and 20% of niche crops. See the USDA National Agricultural Statistics Service Floricultural Crops report online at <http://usda.mannlib.cornell.edu/MannUsda/viewDocumentInfo.do?documentID=1072>

Financial Management: Nurseries require a large initial capital investment in land, equipment, buildings, supplies, stock and labor.

Overhead is substantial: taxes, depreciation, interest, rent, utilities, insurance, maintenance, repairs, new construction, new equipment, office supplies/equipment, and management/administration salaries.

Direct costs per unit include: seeds or starter plants, potting media, fertilizers, pots, pesticides, labels.

“Shrinkage” or loss, due to weather, pests/diseases, poor rooting or establishment, etc. also needs to be considered. This will vary with species and cultivar.

Sustainability: Recycling plastics used in production, recycling water, composting organic byproducts can all make your Green Industry business more “green”.

Bonus – some nurseries create new cultivars. Patenting, or Plant Variety Protection, <http://www.uspto.gov/> is recommended if the sales are likely to exceed the costs of processing this intellectual property coverage.

References:

Requirements and Costs of Establishing and Operating a Three Acre Herbaceous Perennial Container Nursery, Southern Cooperative Series Bulletin #354, The Ohio State University, OARDC, Wooster, OH

Sellmer, James C. and Michael N. Dana, *Starting in the Nursery Business*, Purdue University, 1994
<http://www.extension.purdue.edu/extmedia/HO/HO-212.pdf>

Starting a Greenhouse Production Business

Buy or Build Own: Location: Check on zoning and local building codes, access to major roads, pesticide use restrictions, taxation, utilities, and available labor. Orientation on the land, the topography, and natural windbreaks also need to be considered. Location will determine if the greenhouse is suited to production only, or can be a retail outlet. Plants should be lab-tested, high quality stock, which are provided a lot of sunlight and a reliable and inexpensive water supply. Under some circumstances, recirculating water systems are used for production.

Greenhouse businesses may also be associated with farms, garden centers or nurseries. High tunnels are a lower cost option for starting and growing plants, but only certain crops are suitable for this during certain times of the year.

Building: See the USDA Virtual Grower for assistance in decision making for the structural components, design and predicted heating costs. At least 20,000 s. f. of growing space is needed for a traditional greenhouse operation. <http://www.ars.usda.gov/services/software/download.htm?softwareid=108>

Heating System: It is necessary to know which type of system which will be most effective for the plants you will be growing and your location. See Bartok, John W., Jr., "Fuels and Alternate Heat Sources for Commercial Greenhouses", University of Connecticut, May 2005
<http://extension.umass.edu/floriculture/fact-sheets/fuels-and-alternate-heat-sources-commercial-greenhouses>

Market and Trends: For a business structure, wholesale may be easier to start with for beginners, then the business can branch into retail. Focus on high-quality florist and garden center crops and markets.

Retail businesses need a larger variety of container sizes of seasonal crops, bedding plants, hanging plants, flowering plants and accessories. Maintaining a very attractive appearance is a necessity to attract and retain clientele.

Wholesale businesses usually grow assorted sizes of starter plants of similar types but in smaller sizes, from cell-packs to 1-gallon size. These businesses can look for contract growing opportunities where the crop is ordered and pre-sold.

Marketing: You need to know what sells, when it sells, its use, and who buys it. This is critical. Review crops by season at other greenhouses within a certain radius of your planned location. Talk to local/regional landscapers to determine which plants they purchase.

Your Qualifications: Preparation: You must have the training (at least 2-3 years), resources (at least 2-3 years of personal income after the greenhouse is built) and determination to be successful. Long hours for the first five years are to be expected.

Knowledge: Learn the best management practices for greenhouses. As these are closed systems, they will be different from other growing environments with unique advantages and challenges. A guide was developed by University of Massachusetts Extension that provides much information in one publication.

See: Smith, Tina and Paul Lopes, Greenhouse Best Management Practices (BMP) Manual, University of Massachusetts Extension, 2010. <http://extension.umass.edu/floriculture/bmp/greenhouse-bmp-manual>

Information on sustainable, organic, greenhouse productions methods is also available and can be accessed from ATTRA online at <https://attra.ncat.org/horticultural.html#Greenhouse>

Description of Products: Selection of species and cultivars of plants and growing media are primary. Grow what the market wants. Beginners should focus on annuals, perennials, hanging baskets and vegetable plants.

Prepare detailed crop production technique information for the crops you are interested in growing, including cultural requirements, timing (seasonal and the length of time at different stages will yield different unit cost/time to add together), overhead and per unit costs to determine the best crop mix throughout the year. Start with a tentative production schedule for one to several years. This will need to be readjusted due to changing cultural and market needs over time.

Spring bedding (flower and vegetable) plants generally produce most of the profit. Other crops are grown in summer and fall at a break-even cost to allow for greenhouse employees to be retained longer. Due to high heating costs, many greenhouses close for the middle of winter.

Organization and Management: Timing: first, complete your business plan and meet with the bank(s); order materials in the first quarter; build the facility in summer; order plants/seeds in early fall; work through glitches mid-fall. The following year, start actual growing in January; sell the first plants by early June; clean out and prepare for a fall crop in July; then continue on.

Labor is a critical issue, part of which can be addressed by using a greater amount of automated equipment. With more equipment comes the need for employees with greater technical skills. Consider the quantity and skills of the available labor market in relation to the pay scale you would be offering.

Shipping: most nurseries will arrange for delivery to some or all customers. Hire a truck driver with a CDL and have a good insurance policy.

Equipment and supplies are often a part of the initial building plan and generally include fertilizer injector systems, cooling/heating/ventilation systems, benches (including rolling benches), conveyor belts and materials moving equipment, soil mixers, an automated irrigation system, transplanters, pot-fillers, computer crop systems management, pH monitors, EC meters (for soluble salts levels). Specialized materials and supplies planning include pots, soilless potting mix, fertilizers, biological controls, pest controls, PVC fittings, etc. You may also include supplemental lighting or CO₂ injection equipment.

Maintaining crop records include: fertilizer applications, day/night temperature/humidity, pesticide or biological applications, disease/pest occurrences and severity for each crop, pH and EC monitoring, cooling, and crop cycles.

An additional license required in Pennsylvania is the Plant Merchant Certification from the Pennsylvania Department of Agriculture. See www.agriculture.state.pa.us for more information.

Marketing and Sales: Maintain a database of clients to contact directly, including their payment history.

Financial Management: Costs are based on square foot of greenhouse space per plant per amount of time there. Since there is a large initial capital outlay for structures and a sometimes lengthy crop time to recover crop expenses, maintaining cash flow can be even more difficult than in other businesses.

Sustainability: Water quality issues are very prominent in our current environment; these include irrigation, treating water, managing salts, treating/recycling runoff.

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