

Forest Stewardship

Earning Income from Your Forestland

It can be hard to earn a good living these days, especially if you live in a rural area. As a landowner, you may wonder whether you could improve your income by putting the land to work. Perhaps you already manage your property for timber production but would like a business that provides a constant cash flow. You may value the rural lifestyle and desire a way to make money while working at home. Should you grow Christmas trees or gather mushrooms? Should you set up beehives to produce honey? Perhaps you've considered leasing your land to a hunting club or letting campers in for a fee. Which enterprise will produce the income you desire while preserving the beauty, wildlife, and recreational value of your land?

PENNSTATE

Cooperative Extension
College of Agricultural Sciences

DOUG PIFER

You may already have some good ideas. You may even have a hobby that you feel could work on a larger scale. The next step is to think carefully about your choices. Consult the expertise of business and forest professionals. You can protect your financial assets from unnecessary risks by preparing a thorough business plan that analyzes the technical and financial aspects of your ideas, identifies likely markets, and determines how big the business will have to be to make a profit. Remember that any enterprise, large or small, is more likely to succeed with a plan that accurately predicts the available resources, the skills required, the start-up costs, and the market size. Also, any business that depends on the bounty of the forest must ensure the sustainability of those natural resources well into the future.

This publication provides an overview of the planning process for starting up a nontimber secondary or small-scale enterprise. No single publication, however, will be able to tell you all you need to know. You will need information on the technical, financial, and marketing aspects of the specific enterprises you are considering. At the end of this publication are lists of additional resources to use while devising your business plan. It takes both time and resources to launch a new business. Studying all the factors involved is a good way to improve your chances for success.

Even if you do not want to establish an ongoing forest-products enterprise, keep in mind that you can also take advantage of temporary or small-scale income-producing opportunities on your woodlot. For instance, you might find that, through thinning or cutting of standing and fallen deadwood, you have more firewood than you can use. Selling this surplus firewood can produce some extra income. Many of the publications referred to in this bulletin can help alert you to other such opportunities.

What Is Possible?

Alternative or secondary enterprises on forestlands usually are special forest products and services developed by a family-based business. Frequently, they include value-added products (for example, bagged wood shavings to sell as animal bedding, or maple burls carved into bowls) or products and services with a special niche in the market. They might include nontraditional wild "crops" (such as black walnuts, ferns, or watercress), recreation or tourism services, unconventional production systems (such as aquaculture), or direct marketing and other entrepreneurial marketing strategies. Many hobbies develop into successful small businesses once the owner learns marketing skills, production details, and financial management. In many cases, it is a good idea to start small until you have experience with all aspects of the business.

In Pennsylvania the choices for a forestland-based business are diverse. They include:

- Forest wood products, such as sawlogs, pulpwood, firewood, logging byproducts (sawdust, wood chips), charcoal, decorative wood, greenery, cones, and seeds
- Wild crops and plants for culinary, pharmaceutical, or artistic uses, such as nuts, berries, various herbs, flowering plants, grasses, lichen, and bark
- Specialty crops, such as Christmas trees, mushrooms, honey, maple syrup, ginseng, pond-raised fish, and farm-raised venison
- Recreation access and services, such as hunting preserves, duck blind rentals, campgrounds, summer camps, and nature trails and tours

Planning Your Business

How do you determine which enterprise will be right for you? To be successful, you must evaluate both the suitability and the sustainability of the desired enterprise. A business that is suitable will fit with your family's goals and the ecology of your land. A business that is sustainable will earn you a good profit while preserving your personal values.

When preparing a business plan, there are important questions you can ask yourself to help determine the right enterprise for your situation. You must first focus on the suitability of an enterprise:

- Does this enterprise match my personal, family, and business goals?
- Does my land have the biological and physical resources needed to produce this product or service?
- Does this enterprise make the best use of the natural resources and ecological systems present in my land?
- Does this enterprise make use of my existing strengths and skills?
- Are there sufficient local, regional, or national markets for my product or service at the levels that will produce my desired income?





Once you have decided that an enterprise is suitable for you, your family, and your land, you need to examine whether the enterprise would be economically and ecologically sustainable. Your enterprise should be designed to conserve your financial and natural resources. Questions that address economic sustainability include the following:

- Is production economically feasible?
- Will production be profitable?
- Will there be sufficient cash flow, especially just after start-up?
- Are markets likely to change or become saturated?

Questions that will help you determine ecological sustainability include the following:

- Can the existing resources in my land produce a sustainable yield that will meet my desired income level and cause no damage to the forest ecosystem?
- How dependent is this venture on the weather or other changeable conditions of soil, rain and snowfall, or sunlight?
- Will this venture conflict with the values I've identified as important or the long-term stewardship goals for my land? Will it alter or deplete the diversity of life present on my land?

SUCCESS IN DIVERSITY

Sometimes, if markets are limited, or if you have limited acreage, a single resource-based enterprise by itself may not provide sufficient income for your family. In that case, producing a variety of products and services might enable you to establish a livable income. Carl and Kristin Curtis have carefully planned a workable lifestyle that takes advantage of seasonal variation on their 230-acre property in Wayne County. In the fall and winter, they harvest trees from 130 acres of forest. In the spring, they set 2,500 taps on maple trees to produce an average of 750 gallons of syrup. In the summer, they farm on a small scale while running an alternative summer camp for kids.

The farm used to play a bigger role in their lives. A few years ago they realized they would have to expand their 11-cow dairy to make it competitive, and this expansion would have required investing in bulk milk-storage tanks. They analyzed the likely financial returns from the dairy versus those from an expansion of the camp, and the camp came out the clear winner. Today, they are sure they made the right choice.

"There is so much demand—every year we turn down more kids and fill up sooner," says Carl. Journey's End Farm Camp offers four two-week sessions each summer, with 30 kids each session and a staff of 14. Their program is especially attractive to suburban families from New York, Philadelphia, and Washington, D.C., where collecting eggs or tromping through a stream isn't an everyday experience. The tuition they charge is competitive too—about half the typical cost at camps with more developed facilities.

"We didn't put in a lot of capital improvement," says Carl. "There's no pool, no tennis courts, no lake for sailing, and no large field for organized sports." But the Curtises knew the appeal of the resources they did have—a working farm with animals and hayfields, a great swimming pond, a maple sugar bush, and a creek and forest with hiking trails. Their programs emphasize noncompetitive cooperation and reach into every corner of the property. Campers help out in the garden, take care of animals, and explore the ecology of the pond, stream, and woodland habitats.

Carl's training in field biology and Kristin's experience teaching Spanish have been important resources too. "This would be difficult if you had no interest or training in education. You need to have at least a personal angle on educational goals," says Carl.

The Curtises have been told that they're not "really farming." Carl's response is that when the kids arrive, their programs take priority and the farm has to adapt to them. For instance, typical farm machinery would present too much risk for injuries, so the Curtises farm with "lots of hand tools." They recommend that anyone considering running programs on his or her own property track down a good insurance carrier to be sure of adequate coverage. An accident with one of their campers at a local riding stable one year got them involved in a lawsuit. "Be sure to budget for the insurance costs," Carl advises.

One reason the Curtises have been successful is that they analyze and review their business operations regularly, and try to make prudent and creative choices. They would love to set up an apple orchard, for instance, but they know that prime pruning time in the spring would conflict with gathering maple sap. Recently, they've watched their sap production decline after the trees were hit by forest tent caterpillars. While they wait to see whether they will lose only 5 percent or as much as 30 percent of their trees, they have postponed any logging to reduce disturbances that could add to the maple trees' stress and increase mortality. Until the trees have recovered, Kristin is considering a network nutrition marketing business that could fit in with their diverse schedule.

The dairy now provides milk for their own use and camp cooking, while chickens, turkeys, rabbits, goats, ducks, and pigs, along with vegetables and fruits, provide food and a great education for the kids, as well as extra income. "The choices for our lifestyle will never make us wealthy," says Kristin, "but we like to feel we're contributing to society and the world."

Getting Help

A forest-based enterprise does not have to be unusual to work. Many people in rural areas make additional income by tapping maple trees or selling pre-cut firewood. The important factor is having a reliable market. Seek out people who have experience with the technical and management aspects of the business. They can give you an idea of potential start-up costs, teach you good marketing techniques, and indicate how sensitive your enterprise might be to the weather or to unforeseen environmental changes.

If your idea is relatively new, there may be fewer experts to consult and little or no technical and marketing support. In this case, you may need to devise your own methods for producing and selling your product or service.

A common mistake is thinking that because a business works well for someone else, it will work well for you too. At a recent workshop in a small Pennsylvania town, roughly 30 landowners showed up to learn how to start a cut-your-own Christmas tree farm. Growing Christmas trees may have seemed a logical and easy choice, but few of these entrepreneurs had asked themselves who was going to buy their Christmas trees, much less what would happen if more than one of them decided to go ahead. This rural town of 10,000 households was situated quite a distance from any city, so the market was fairly restricted. If even 30 percent of the households decided to buy a Christmas tree locally, only 3,300 trees a year could be sold, and one local farm already supplied 1,200 trees. Realistically evaluating your potential market is an essential step when developing a business plan.

What Resources Are Available?

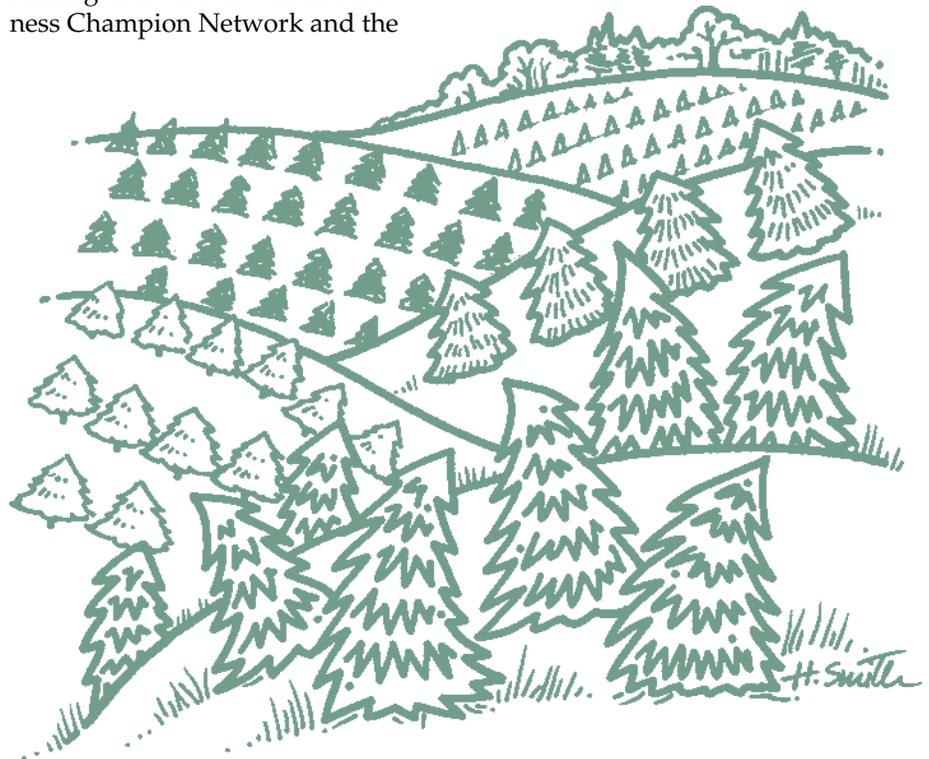
The best way to plan your business is through a step-by-step analysis. First, seek out the organizations and publications that can help. We strongly suggest you obtain a copy of *Farming Alternatives*, a workbook available from Cornell University Cooperative Extension (see the resource list on page 8), from which many of the suggestions in the following analysis were borrowed. This workbook offers a comprehensive step-by-step approach that includes advice on planning your business, assistance with financial calculations, and a fictional case study that shows you how one family might plan a new business.

Next, contact the Department of Community and Economic Development of the Commonwealth of Pennsylvania and ask for the *Entrepreneur's Guide*. It provides advice and checklists for planning and start-up, as well as information on federal and state laws and licenses. The resources listed can direct you to a number of other state and local agencies and organizations that can provide advice, ideas, and assistance. Among these are the Small Business Champion Network and the

Partnerships for Regional Economic Performance, which provide information and technical assistance in all phases of business development, and the Service Corps of Retired Executives (SCORE). SCORE provides free management counseling and training by experienced volunteers who can help you prepare a business plan and direct you to sources of legal and financial help. SCORE has 23 chapter offices located throughout the state.

Also contact your local Chamber of Commerce or business development office. Find out what resources are available from the universities and colleges in your area. Many of them have Small Business Development Centers whose staff can help with accounting, record keeping, business planning, market research, and financial analysis. Talk to state Department of Conservation and Natural Resources Bureau of Forestry staff and county extension educators to help evaluate your resources. Visit your local banks to find out what is needed to obtain a business loan or other methods of financing.

There are many people and programs that can help you get off to a good start. The resource list in this publication describes just a few of these sources of help.



Analyzing Your Options

Once you have an idea of what is involved, you can begin your business plan. The following outline is taken primarily from the *Farming Alternatives* workbook.

SUITABILITY

Assess your personal and family goals first. Remember that a home-based business will affect everyone in the home, whether or not they become directly involved. Identify the specific goals and objectives that each of you would like the new enterprise to accomplish. Is there a certain amount of money the new venture must make? How much risk are you and your family willing to take? Do you have personal savings you are willing to risk, or would you prefer to borrow money? How much more time and energy will be required to make the new venture work?

Next, take an inventory of all the available resources. Begin with your own skills and experience. Which of your personal characteristics do you think will be most useful in business management? Have you managed a business before? Are you proficient in the skills needed to produce your product? Which family members are willing to help with the new venture, and what skills and interests can they offer?

After taking a personal inventory, map out your land's resources with the help of resource professionals. If you have not made a management plan for your forest, now is the time to do it. Identify your land's soils and vegetation, its land-use history, its wildlife, water, and unique features. What has the land produced in the past? What is it well suited for producing? Which values inherent in the land do you want to maintain? Which areas need protection? Which areas could be developed? Consider also the physical resources of buildings, machinery, and equipment. Draw up a clear map of your land with the important features marked.

MARKET MATTERS

Ralph Wheland did not do much business research when he and a partner decided to raise native white-tailed deer. After several years and a \$60,000 investment, he says, "There's a lot I'd do differently." One of the biggest lessons he has learned is that "you must get out and promote yourself if you want it to work as an income-producing operation."

Ralph and his partner are confident that they are "over the hump" now that they have discovered a national marketing magazine in which to advertise. "You've heard of the Auto Locator?" he asks. "This is a kind of 'animal locator' for exotic game breeders." Just as with beef cattle, the best money in raising deer lies with breeder stock. Large healthy bucks can bring up to \$8,000 apiece, while does generally go for about \$250. Some owners of hunting preserves also buy deer to stock. The market for venison itself is not as strong unless you have access to upscale urban restaurants. In rural Pennsylvania, potential customers are likely to balk at paying \$7.50 a pound for meat they could obtain themselves with just the cost of a hunting license.

Wheland's game farm is unusually large—he has had as many as 120 animals at one time, about 100 more than the average breeder. He has had to learn much of the nuts and bolts of management by trial and error. For instance, he has learned that he shouldn't make eye contact with his deer if he wants more than a second to look them over, and that they are much easier to handle at night.

"This wasn't intended as an expensive hobby," Wheland asserts, "but it takes more work than we expected. One-and-a-half hours a day just to feed, a couple hours a week in bookkeeping, seasonal handling for vaccinations, plus, I'm tired of building fences!" (The state Game Commission requires fences to be 10 feet high.)

Wheland also has had to contend with the lack of coherent regulations. Because there were no regulations for deer meat from the state or federal level, he was selling venison to a Pennsylvania restaurant until the state Department of Health made him stop. It had a rule that no restaurant could sell meat that had not been USDA inspected, even though there was no facility to carry out such inspections for venison. Wheland was stuck. Regulations are slowly catching up—now there's a butcher shop certified to inspect venison. The U.S. Department of Agriculture now requires all deer to be tested for TB and a couple other common diseases before they are sold—adding another labor-intensive process to the act of selling.

Although it has taken some time to learn how to manage a species that is still intrinsically wild, as well as to fit a new business into state and federal regulatory structures, Wheland is optimistic that he will be turning a profit soon. As population pressures put the squeeze on favorite hunting lands, hunting preserves may become more popular, providing an even better market for Wheland's deer. He is refining his management techniques and broadening his market.

What advice would Wheland offer other entrepreneurs? "If it's going to be a business," he says, "you've got to treat it like one."

Even if you have one really good idea, brainstorm at least a few possible business options that seem to fit with your family goals and existing resources. It will be helpful to make comparisons as you proceed with the analysis, and you may just discover an even better idea this way.

Next, consider the market—who will buy your product or service?

What are the main features of your product or service, and how does it benefit the buyer or user? How will you distribute or advertise your product? How close are you to a city or large town? How easy is it to travel to your land or to the best markets? Are there wholesalers who would buy your product? Will your product need further processing? Is

your product or service so unusual that you will need to create a new market for it?

Finally, evaluate all the potential businesses that seem suited to the skills and resources available. Rate each on a scale of 1 to 10 for each of these characteristics: family preference, especially desirable features, good use of natural and human resources, appropriateness for management goals, potential markets, and manageable start-up costs.

SUSTAINABILITY

Simply identifying a potential market will not ensure your business's success. The first and most important step in analyzing sustainability is to understand your market, which is not always a simple task. For the enterprise that looks most promising to you, clearly define the product or service you would produce—its features, the months in which it is offered, and the benefits to the buyer. Rarely is “need” the only reason people buy something. For instance, a family fishing for stocked trout in a pond is buying a family adventure and an experience in nature in addition to the fish. It helps to write a clear and concise definition of your product or service that conveys all of this information. Then you will need to undertake market research that reveals who your potential customers are, what competition you have, and what current consumer trends exist, so that you can project your potential sales volume and prices.

To make these projections, examine demographics, consumption, and future market trends by obtaining data from libraries, government offices, chambers of commerce, universities, trade magazines, and computer databases. You also can conduct primary research yourself.

If you are considering roadside sales, for example, you might count the cars passing at certain times of day or during your projected season. If you want to produce maple syrup, you can send a written survey to all grocery stores, natural food stores, and specialty shops in your area to find out whether they would

consider buying locally produced syrup. If market research is new to you, obtain help to make sure you use the best techniques to reach the right conclusions. Before you go into business, you should have a clear picture of your competition, the market trends over the last 10 years, expected trends for the next five to 10 years, and your expected price and sales volume. If your research shows that supply already exceeds demand or that consumption and prices are likely to decline, you will know that you need to try a different enterprise.

The second aspect of sustainability is production feasibility. Can you reasonably provide your product or service using available resources? Determine the climate, soil, and water requirements, if any. Describe where and how your products will be found, harvested, or made, and how they will be packaged and distributed. Can your resources regenerate given your projected volume of harvest? What will be the long-term ecological impacts of your use of these resources? Will your new business affect stewardship goals for your forest? Analyze your need for buildings, processing facilities, machinery, and equipment. Calculate the labor required in each month and the level of skill needed for each job.

Analyzing production also involves determining the range of quality allowable in your product or service and how well the quality you can offer compares with that of your competitors. Quantify the average rate of production you can reasonably expect. Then divide your expected sales volume, determined earlier, by this average production rate to determine how large your business must be (the required resource base) to achieve the desired level of sales.

Legal considerations are extremely important when considering the

sustainability of your enterprise. The common tradition has been that a landowner should be able to use the land as he or she chooses, but most enterprises are also subject to federal, state, and/or local legal restrictions. You will need the advice of a lawyer at some point in your planning process. A number of issues can arise for many landowners seeking to start a new business.

One of the first concerns is what you are allowed to do with your land. Local zoning restrictions may limit your choices for a new enterprise. Deed restrictions on use of the land may surface during a thorough title search, with rights of way that may need to be “extinguished” (removed) or provided for. If your land has been granted preferential tax assessment for its agricultural use, this status could be threatened by operating a new business. Finally, environmental regulations may require an environmental impact statement as a condition for zoning approval or variances, especially if your business will affect air pollution, noise levels, drainage and flooding, or the aesthetics of your community. Specific regulations generally exist for changes to surface waters and drainage patterns, impacts on wetlands, clean-up of hazardous wastes, and effects on endangered species.

A second concern is about regulations on certain products or processes. For instance, federal and state laws regulate the ownership of

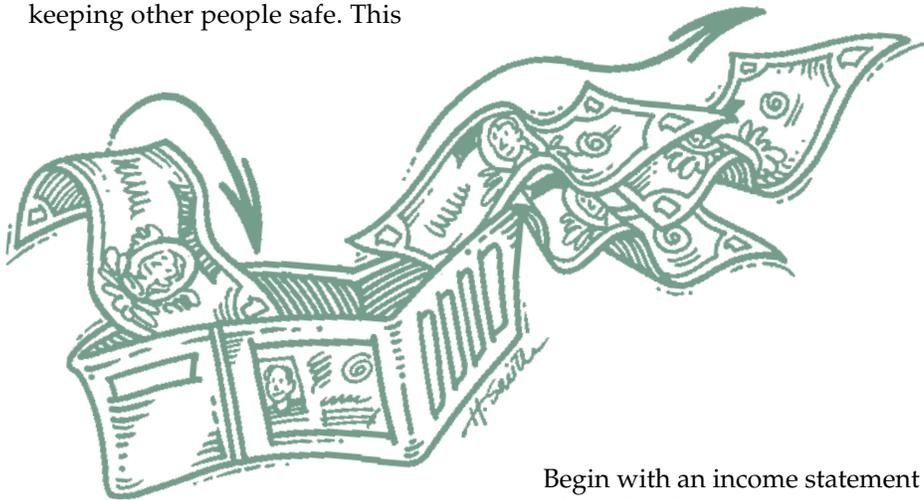


native wild species, such as white-tailed deer, and the importation or exportation of exotic or nonnative species, such as fallow or red deer. Processed food products generally must conform to labeling regulations and health codes. Any enterprise that produces wastes has to comply with local, state, and federal regulations for waste disposal.

If you are considering an enterprise that opens up your property for use by other people, you need to pay special attention to liability issues. You can be sued by anyone suffering injuries or damage from activities conducted on your property. As the landowner, you are responsible for keeping other people safe. This

You should not begin a new enterprise until you know how you are or are not limited by all these various regulations and you are aware of the likely costs of compliance.

Two more steps remain in preparing your business plan. The first is to analyze profitability. Will establishing your new enterprise bring higher profits than you could make without it? To answer this question you will need to compute operating costs and other expenses, and subtract them from expected income. This procedure requires some careful judgment on your part, and the advice of someone with experience in the new enterprise.



responsibility can extend to the prevention of “nuisance” by any activities conducted on your property. Thus, in addition to carefully planning how to conduct your operation and eliminate hazards, you also will need to buy adequate liability insurance.

If your enterprise is open to the public, equal access and civil rights laws may apply. You may need to provide restrooms, emergency exits, and access for the handicapped. If you hire employees, various labor laws will affect your operations, such as minimum wage, special taxes, regulations for migrant workers, and employee use of toxic substances. Finally, many business activities require additional permits and licenses, such as a food handling license, a regulated shooting ground permit, and even a permit to place a business sign.

Begin with an income statement that describes the net yearly earnings of your current business. You will be comparing receipts (payment received in exchange for goods or services provided) from a base year with predicted receipts for an average future year without the new enterprise and with predicted receipts for an average future year with your new enterprise. If the average future year with the new enterprise shows significantly greater net farm income compared to an average future year without it, then your choice may be a good one. If not, you may want to consider how you could change the product, the resources needed, or the marketing strategy to increase profitability. You can perform a sensitivity analysis on your data to determine which factors (such as expected yields, the prices you set, the degree of processing, or the volume of sales) would have the greatest impact on net income were they to change.

The final step is to determine financial feasibility. Even if your new enterprise is profitable, the amount of profit may not provide enough cash to cover operating expenses, family living needs, and debt payments. To do the analysis, you will need to calculate the total cash inflows (such as cash receipts, sale of assets, and money borrowed for capital purchases) and total cash outflows (such as expenses, capital purchases, debt payments, and family living expenses) for each of the first two years of operation and for an average future year. If your cash flow is zero or negative for a year or longer, you will need to borrow money or use more savings to meet all your financial obligations that year. If the new enterprise shows negative cash flow in the average future year, you will be risking business failure to pursue it.

Summary

Although the amount of research ahead of you may seem daunting after this quick overview, keep the big picture in mind. You do not need to have every detail worked out before you begin, but understanding the major aspects of the business you are planning will enable you to make sound judgments and smart choices. It is helpful to have a good idea, and it is also helpful to determine if that good idea will not work for you. Choose an enterprise that is both suitable to your situation and sustainable. Get help and advice from diverse sources. Prepare a business plan that includes specific figures and computations for the financial aspects. Determine possible markets and consider trying out your idea on a small scale first. Whether or not you choose to go ahead with your original idea, you will have learned a good deal about business management. If you then decide to start a new enterprise, you can do so with confidence and the likelihood of success.

Resources for Forestland Enterprises

The following list of resources will help you select an enterprise and prepare a business plan.

PUBLICATIONS

The Entrepreneur's Guide. Published by and available from the Commonwealth of Pennsylvania, Department of Community and Economic Development, 400 North Street, 4th Floor, Commonwealth Keystone Building, Harrisburg, PA 17120, phone 866-466-3972. Includes advice on planning and starting a small business, discussion of pertinent laws, regulations, and licenses, and a detailed resources directory. www.newpa.com/business.

Farming Alternatives: A Guide to Evaluating the Feasibility of New Farm-Based Enterprises. Northeast Regional Agricultural Engineering Service, Cooperative Extension, Cornell University, 1991. A workbook format that considers all aspects of resource-based business planning. Available for a fee. Phone 607-255-7654.

Income Opportunities in Special Forest Products: Self-Help Suggestions for Rural Entrepreneurs. United States Department of Agriculture, Forest Service, Agriculture Information Bulletin 666, Washington, DC, 1993. A thorough discussion of business choices for landowners, from charcoal to honey and mushrooms, with descriptions of the product, profiles of producers, and helpful bibliographies and references.

AGENCIES AND ORGANIZATIONS

Pennsylvania Department of Community and Economic Development.

— Includes the Small Business Champion Network, 400 North Street, 4th Floor, Commonwealth Keystone Building, Harrisburg, PA 17120, phone 800-280-3801. This organization answers state-related and general business questions about licenses and permits. www.newpa.com/business/business-assistance/sbcn.

— Includes the Partnerships for Regional Economic Performance, 400 North Street, 4th Floor, Commonwealth Keystone Building, Harrisburg, PA 17120, phone 866-466-3972. This organization provides information and technical assistance in all phases of business development, with referral services for entrepreneurial, management, and financial skills training, contracting opportunities, business counseling, and networking. www.newpa.com/business/business-assistance/prep-regions.

Penn State Extension. Contact your county extension office listed under County Government or the agriculture extension office, and/or contact the Penn State Center for Economic and Community Development, 103 Armsby Building, University Park, PA 16802, phone 814-863-8640. This program offers publications, technical assistance, workshops, and seminars in business, economic and community development, plus management and marketing assistance for agriculturally related firms, all at little or no cost. aese.psu.edu/research/centers/cecd.

Pennsylvania State Data Center. Institute of State and Regional Affairs, Penn State Harrisburg, 777 West Harrisburg Pike, Middletown, PA 17057, phone 717-948-6336. This center makes available U.S. Census and other data. Staff members can help you find the information you need to identify a potential market. pasdc.hbg.psu.edu.

Service Corps of Retired Executives (SCORE). Check your phone directory to find the office nearest you. SCORE offers management counseling and training through 23 offices located throughout the state. Experienced volunteers can help with business plans, corporate structure, ideas for financial support, and referrals for legal advice. Occasionally sponsors all-day workshops. www.score.org/chapter-list.

Small-Business Development Centers (SBDCs). Check the *Entrepreneur's Guide* or call the Pennsylvania Department of Community and Economic Development at 215-746-6474 to find the SBDC nearest you. Organized by the Small Business Development Center Program of the U.S. Small Business Administration, these centers are located at 16 universities and colleges throughout the state. They offer management assistance and counseling in areas of accounting, record keeping, business planning, market research, and financial analysis. Many services are free; some, such as short courses and workshops, have a fee. www.pasbdc.org.

University of Maryland Extension. *Forestry and Natural Resources Enterprise Opportunities*. University of Maryland, Western Maryland Service Center, 18330 Keedysville Road, Keedysville, MD 21756, phone 301-432-2762, ext. 323. extension.umd.edu/woodland/forestry-and-natural-resource-enterprise-opportunities.

Assistance for Specific Products or Services

FOREST WOOD PRODUCTS

Sawlogs, pulpwood, firewood, byproducts such as sawdust and wood chips, charcoal, decorative wood, greenery, cones, and seeds

PUBLICATIONS

Budd, W. W., I. Duchhart, L. H. Hardesty, F. Steiner, eds. 1990. *Planning for Agroforestry*. Papers presented at an international symposium held at Washington State University, Pullman, on April 24–27, 1989, Elsevier Science Publishing Company, Inc., New York, NY.

Forest Leaves. Published for the Pennsylvania DCNR Bureau of Forestry by Penn State Extension Renewable Natural Resources, Department of Ecosystem Science and Management, 416 Forest Resources Building, University Park, PA 16802, 814-865-3208. extension.psu.edu/natural-resources/forests/private/tools-resources/publications.

Forest Stewardship Publications. Available from Penn State Extension Renewable Natural Resources, Department of Ecosystem Science and Management, 416 Forest Resources Building, University Park, PA 16802. These publications cover various topics useful to woodland owners, from developing a management plan to working with consultants. Write for a current list of titles. extension.psu.edu/natural-resources/forests/private/tools-resources/publications.

Hamilton, Rick, and Mike Levi. 1987. "Alternative Sources of Income from Your Timberland." *Forest Farmer* 17–19 (July–August).

Hoadley, Bruce R. 1980. *Understanding Wood*. Newtown, CT: The Taunton Press.

Nish, Dale L. 1980. *Artistic Woodturning*. Provo, Utah: Brigham Young University Press.

Pennsylvania Woodlands Timber Market Report. Published quarterly by Penn State Extension Renewable Natural Resources, Department of Ecosystem Science and Management, 416 Forest Resources Building, University Park, PA 16802, 814-865-3994. extension.psu.edu/natural-resources/forests/timber-market-report.

AGENCIES AND ORGANIZATIONS

American Forests. 1220 L Street NW, Suite 750, Washington, DC 20005. An annual membership fee includes monthly *American Forests*. www.americanforests.org.

American Tree Farm System. American Forest Foundation, 2000 M Street NW, Suite 550, Washington, DC 20036. Sponsored by the forest industry to encourage landowners to actively manage forest and wildlife resources. The state program is administered by the Pennsylvania Forestry Association and supported by the forest industry, the Pennsylvania DCNR Bureau of Forestry, and other individuals and organizations interested in resource management. www.treefarmssystem.org.

County Conservation District. Located in your county seat or look in the blue pages of your telephone directory under county government. This organization can provide you with information about soil and soil management. www.pacd.org.

County Forest Landowner Associations. Several county and multicounty associations exist across the state. Landowners meet to discuss forest-related interests and to tour woodlots and areas of interest. Contact your county extension office or conservation district to see if your county has one.

National Woodland Owners Association. 375 Maple Ave. E., Suite 310, Vienna, VA 22180. 703-255-2700. An annual membership fee includes monthly *Woodland Report* and a discount on the quarterly *National Woodlands Magazine*. www.woodlandowners.org.

Pennsylvania Forestry Association. PO Box 1278, Mechanicsburg, PA 17055. This association meets annually in late summer or early fall. An annual membership fee includes *Pennsylvania Forests*, a quarterly magazine. Recommended for anyone with an interest in Pennsylvania's forest resources. www.paforestry.org.

WILD CROPS AND PLANTS

For culinary, pharmaceutical, or artistic uses, such as nuts, berries, various herbs, flowering plants, grasses, lichen, and bark

PUBLICATIONS

Angier, B. 1974. *Field Guide to Edible Wild Plants*. Harrisburg, PA: Stackpole Books.

Coon, N. 1980. *Using Wild and Wayside Plants*. New York, NY: Dover Publications.

Fielder, M. 1983. *Wild Fruits: An Illustrated Field Guide and Cookbook*. Chicago, IL: Stipes Publishing.

Foster, Steven, and James A. Dube. 1990. *A Field Guide to Medicinal Plants—Eastern and Central North America*. Boston, MA: Houghton Mifflin.

Freeman, Sally. 1991. *Herbs for All Seasons: Growing and Gathering Herbs for Flavor, Health, and Beauty*. New York, NY: Penguin.

Garrett, H. E., W. B. Kurtz, J. P. Slusher. 1992. *Walnut Agroforestry*. University of Missouri Extension, Columbia, MO 65211. Pub. No. G5020. Available for a fee. extension.missouri.edu/p/G5020.

The Herb Quarterly. A quarterly journal featuring herbal lore, tips on hard to grow varieties and medicinals, and more. Phone 510-668-0268. www.herbquarterly.com.

MacDaniels, L. H. *Nut Growing in the Northeast*. Ithaca: Cornell Cooperative Extension Service.

Medsker, O. P. 1978. *Edible Wild Plants*. New York: MacMillan.

Shaudys, Phyllis. *Herbal Treasures*. Box 428, Washington Crossing, PA 18977. A compendium of the best herb crafts, recipes, and gardening ideas.

Wild Plants for Income (RD No. 771). Natural Resources Management and Income Series. Available from West Virginia University Extension Service, Morgantown, WV 26506. www.wvu.edu/~exten/infores/pubs/other/rd771.pdf.

AGENCIES AND ORGANIZATIONS

American Herb Association. PO Box 1673, Nevada City, CA 95959. This association promotes public education about herbs and herbal products and offers quarterly newsletter and source directories. A membership fee is required. www.ahaherb.com.

The Herb Growing and Marketing Network. PO Box 245, Silver Spring, PA 17575. 717-393-3295. Hosts the *Herbal Green Pages*, an annual herbal business and resource guide with over 2,000 wholesale and retail listings. www.herbworld.com/green_pages.htm.

Herb Research Foundation (HRF). 4140 15th Street, Boulder, CO 80304. 303-449-2265. This independent, nonprofit educational and research organization is dedicated to raising funds for research and providing reliable scientific data for members, the public, and the media. It also publishes *HerbalGram* quarterly. www.herbs.org.

The International Herb Association (IHA). PO Box 5667, Jacksonville, FL 32247. This large trade organization publishes a bimonthly newsletter and membership directory, and holds seminars, workshops, trade shows, and conferences. www.iherb.org.

Lady Bird Johnson Wildflower Research Center. 4801 LaCrosse Avenue, Austin, TX 78739. This center is devoted to reestablishment and conservation of native plants, maintains a national clearinghouse on native plants, their sources, and appropriate organizations and agencies, and publishes *Wildflower Newsletter* and *Wildflower Journal*. www.wildflower.org.

National Wild Foods Association. 3301 Hemlock Avenue, Parkersburg, WV 26104. This association offers information on preparation and lore of wild foods in all 50 states. www.wildfoodadventures.com.

North American Fruit Explorers. 1716 Apples Road, Chapin, IL 62628. This organization publishes *Pomona*, a quarterly journal, and holds annual meetings. www.nafex.org.

Pennsylvania Chapter of the American Chestnut Foundation. 206 Forest Resources Lab, University Park, PA 16802, phone 814-863-7192. Conferences, information, and a periodic newsletter, *Chestnut Tree*. www.patacf.org.

Pennsylvania Nut Growers Association. 1612 New Danville Pike, Lancaster, PA 17603. www.pnga.net.

The Society for Economic Botany. PO Box 368, Lawrence, KS 66044, phone 718-817-8632. A scientific society that fosters research on economically useful plants and publishes the quarterly journal *Economic Botany*. A membership fee is required. www.econbot.org.

USDA National Institute of Food and Agriculture, Washington, DC 20250-2200. This agency provides information for small-scale and specialty agricultural producers and offers a helpful list of sources and resources for the grower and marketer. www.csrees.usda.gov.

Walnut Council. Wright Forestry Center, 1007 N. 725 W, West Lafayette, IN 47906, phone 765-583-3501. This organization provides a newsletter, conferences, and tours. www.walnutcouncil.org.

SPECIALTY CROPS

Christmas trees, mushrooms, honey, maple syrup, ginseng, aquaculture, farm-raised venison, and others

PUBLICATIONS

American Ginseng Trends. Wausau, WI: Future Concepts.

Aquaculture North America. 4623 William Head Road, Victoria, BC V9C 3Y7 Canada, phone 250-474-3982. A bimonthly source of information on aquaculture with sources of equipment and supplies. Available for a yearly subscription fee. www.aquaculturenorthamerica.com.

Beyfuss, Robert L. *American Ginseng Production in New York State*. Cornell Cooperative Extension of Greene County.

Gentry, Curtis. *Small-Scale Beekeeping*. Peace Corps AT Dev. Series: Manual M-17. Washington, D.C.: Peace Corps Information Collection and Exchange.

Ginseng: A Production Guide for North Carolina. Raleigh: Agricultural Extension Publications, North Carolina State University. www.ces.ncsu.edu/depts/hort/hil/pdf/ag-323.pdf.

Growing Shiitake Mushrooms in a Continental Climate. Field and Forest Products, Inc., N3296 Kozuzek Road, Peshtigo, WI 54157. Available for a fee.

Hankins, Andrew G., and Charles W. Coale. *Marketing and Distribution of Shiitake Mushrooms: A Virginia Retail Case Study*. (Bul. 90-4). Blacksburg: Virginia Agricultural Experiment Station, Virginia Tech.

The Hive and the Honey Bee. 1975. Hamilton, IL: Dadant & Sons. Also available from agAccess Book Catalog, PO Box 2008, Davis, CA 95617, phone 916-756-7177. A technical compendium.

Houston, David R., Douglas C. Allen, Denis Lachance. 1990. *Sugar Bush Management: A Guide to Maintaining Tree Health*. Gen. Tech. Rep. NE-129. Upper Darby, Pa.: Northeastern Forest Experiment Station, U.S. Department of Agriculture Forest Service.

Kelley, Walter T. 1985. *How to Keep Bees and Sell Honey*. Clarkson, KY: Walter Kelley Company.

Morrow, Robert R. 1981. *Sugar Bush Management*. Information Bulletin 110. Ithaca: New York State College of Agriculture and Life Sciences, Cornell University. maple.dnr.cornell.edu/pubs/Sugar%20Bush%20Management.pdf.

Nontimber Forest Products (NTFPs) from Pennsylvania. Penn State Extension Renewable Natural Resources, Department of Ecosystem Science and Management, 416 Forest Resources Building, University Park, PA 16802, phone 814-863-0401. extension.psu.edu/natural-resources/forests/private/tools-resources/publications.

North American Maple Syrup Producers Manual. Ohio State University, Communications and Technology, Media Distribution, 216 Kottman Hall, 2021 Coffey Road, Columbus, OH 43210, phone 614-292-1607. Also available through the Ohio State University Extension e-Store at estore.osu-extension.org/product-details.cfm?sku=856.

The Ohio Christmas Tree Producers' Manual. Bulletin 670. Columbus: Ohio Cooperative Extension Service. Available for a fee. ohioline.osu.edu/b670.

Persons, Scott W. 1986. *American Ginseng: Green Gold*. Pompano Beach: Exposition Press of Florida.

Royse, Daniel J. 2001. *Cultivation of Shiitake on Natural and Synthetic Logs*. University Park: Penn State College of Agricultural Sciences. pubs.cas.psu.edu/FreePubs/pdfs/ul203.pdf.

Southern New England Christmas Tree Growers' Manual. For price and ordering information, contact Agricultural Publications, University of Connecticut, at 203-486-3336. www.christmas-trees.org/SNE-GrowersManual.pdf.

Vivian, John. 1986. *Keeping Bees*. Charlotte, VT: Williamson Publishing. This publication includes planning, management, equipment, diseases, national and international sources of information, and suppliers.

AGENCIES AND ORGANIZATIONS

American Beekeeping Federation. 3525 Piedmont Road, Building 5, Suite 300, Atlanta, Georgia 30305, phone 404-760-2875. This organization sponsors educational services, workshops, conferences, and contests, and provides a bimonthly newsletter, membership directory, and classified ads. www.abfnet.org.

American Honey Producers Association. PO Box 435, Mendon, UT 84325, phone 281-900-9740. www.ahpanet.com.

American Mushroom Institute. 1284 Gap Newport Pike, Suite 2, Avondale, PA 19311, phone 610-268-7483. www.americanmushroom.org.

Appalachia Mushroom Growers Association. Rt. 1, Box 30BYY, Hayward, VA 22722. An annual membership fee includes quarterly newsletter *Appalachian Mushroom Farmer*.

Eastern Apicultural Society of North America. Pennsylvania Chapter, c/o Vincent Aloyo, 736 Cathart Road, Blue Bell, PA 19422, phone 484-557-4049. This organization's members include hobbyists, honey producers, honey packers, and equipment manufacturers. It provides educational services, conferences, and a quarterly journal. www.easternapiculture.org.

The Ginseng Research Institute of America. 2272 Circle Dirve, Wausau, WI 54401, phone 715-845-7300.

North American Mycological Association. PO Box 64, Christiansburg, VA 24068. www.namyco.org.

Pennsylvania Agricultural Statistics Office. 4050 Crums Mill Road, Harrisburg, PA 17112, phone 717-787-3904. This organization distributes data from the Federal Agricultural Statistics Board on agricultural commodities. Special reports on minor crops such as mushrooms are sometimes available. Data are provided on prices, volume, inventories and stocks, rate of harvest, and utilization.

Pennsylvania Christmas Tree Growers Association. 4305 North Sixth Street, Suite A, Harrisburg, PA 17110, phone 717-238-9765. This association provides educational programs, marketing support, and research support, and publishes the *Pennsylvania Christmas Tree Bulletin* quarterly. www.christmastrees.org.

RECREATION ACCESS AND SERVICES

Hunting preserves, duck-blind rentals, campgrounds, summer camps, nature trails and tours, other

PUBLICATIONS

Bahals, J. E. 1989. "Harvesting Vacationers." *Farm Futures* (January): 34H.

Belt, Dean C., and Gerald F. Vaughn. *Managing Your Farm for Lease Hunting: A Guide to Developing a Hunting Lease*. Bulletin No. 147. Newark: Delaware Cooperative Extension.

Berke, Joseph, Carol Berke. 1991. "The Accidental Tourist." *New Business Opportunities*. October: 44-45.

Bromley, P.T., E.J. Jones, R. Hamilton. 1991. "It Is Possible to Have Both Wildlife and Productive Forests." *Forest Farmer*. February: 56-58.

Cichra, Charles. 1989. *Fee Fishing as an Economic Alternative for Small Farms*. Southern Rural Development Center, Box 5446, Mississippi State University, Mississippi State, MS 39762.

Darst, P., G. Armstrong. 1980. *Outdoor Adventure Activities for School and Recreation Programs*. Minneapolis, Minn.: Burgess Publishing Company.

Developing a Bed 'n Breakfast Business Plan. NCREA Pub. 273. Champaign: University of Illinois. web.aces.uiuc.edu/vista/pdf_pubs/b&b.pdf.

Hunting Preserves for Sport or Profit. 1987. Kingsville: Caesar Kleberg Wildlife Research Institute, Texas A&M University.

Joiner, S., and J. Shell. 1990. "Legal Liabilities of Hunting Clubs." *Arkansas Game and Fish* (Fall): 26-27.

Knudson, Douglas. 1984. *Outdoor Recreation*. New York: MacMillan.

Maryland Sea Grant, University of Maryland. Various titles, including *Farm Pond Management* and *Aquaculture in Maryland and Virginia*. ww2.mdsg.umd.edu/store/index.php.

Shaw, W. W., and W. R. Mangun. 1984. *Nonconsumptive Use of Wildlife in the United States*. Publication 154. Washington, DC: U.S. Department of the Interior, Fish and Wildlife Resources.

Stankus, Jan. *How to Open and Operate a Bed and Breakfast Home*. Chester, CT: The Globe Pequot Press.

Virginia Cooperative Extension Fisheries Publications. Various titles, including *Freshwater Fish Farming in Virginia: Selecting the Right Fish to Raise* (Pub 420-010) and *Should You Attempt Fish Farming?* (Pub 420-897). Blacksburg: Virginia Tech. pubs.ext.vt.edu/category/aquaculture-seafood.html.

AGENCIES AND ORGANIZATIONS

American Camping Association. 5000 State Rd. 67N, Martinsville, IN 46151. This organization promotes quality experiences in organized camping for youths and adults. www.acacamps.org.

American Hiking Society. 1422 Fenwick Lane, Silver Spring, MD 20710. Dedicated to promoting hiking and trails in America. www.americanhiking.org.

Association of Consulting Foresters. 312 Montgomery Street, Suite 208, Alexandria, VA 22314, phone 703-548-0990. www.acf-foresters.org.

Forest Landowners Association. 900 Circle 75 Parkway, Suite 205, Atlanta, GA 30339, phone 404-325-2954. www.forestlandowners.com.

National Forest Recreation Association. PO Box 488, Woodlake, CA 93286, phone 559-564-2365. www.nfra.org.

National Shooting Sports Foundation. 11 Mile Hill Road, Newtown, CT 06470. This organization promotes better understanding of shooting sports and practical conservation. www.nssf.org.

National Woodland Owners Association. 374 Maple Avenue East, Suite 310, Vienna, VA 22180, phone 703-255-2300. www.woodlandowners.org.

Sport Fishing Institute. Suite 320, 1010 Massachusetts Ave. NW, Washington, DC 20001. This organization promotes high-quality recreational fishing opportunities.

Also check with local hiking clubs, nature conservancies, and environmental education centers in your area for ideas, information, and possible collaboration.

Other Useful References

PUBLICATIONS

The Directory for Small-Scale Agriculture. (Stock #001-000-04539-3) \$5.50. Superintendent of Documents, U.S. Government Printing Office, North Capitol St., NW, Washington, DC 20402.

Income Opportunities for the Private Landowner Through Management of Natural Resources and Recreational Access. Proceedings from 1989 conference of the same title, contains over 40 papers on natural resource based enterprises. Includes information on marketing, economics, business management, liability, and lease criteria associated with hunting, fishing, and outdoor recreation. Contact: WVU Foundation Inc., at West Virginia University, 307 Percival Hall, PO Box 6125, Morgantown, WV 26506-6125. Available for a fee.

Kays, J. S., G. R. Goff, P. J. Smallidge, W. N. Grafton, and J. A. Parkhurst, eds. 1998. *Natural Resources Income Opportunities for Private Lands: Proceedings of the Conference*. College Park: Maryland Cooperative Extension. Available from PALS Publishing, PO Box 4557, Ithaca, NY 14852-4557, phone 607-255-7654. palspublishing.cals.cornell.edu/nra_order.taf?_function=detail&pr_id=153&_UserReference=04B92DA9848664F5525E897C.

Small-Scale Agriculture Today. This quarterly newsletter is published by the USDA Office for Small-Scale Agriculture. It provides information on a variety of income enterprises and upcoming educational programs. USDA/CSRA/SPPS, Office of Small-Scale Agriculture, 14th & Independence Ave, SW, Washington, DC 20250-2200.

AGENCIES AND ORGANIZATIONS

Cornell Small Farms Program. Warren Hall, Cornell University, Ithaca, NY 14853. The monthly e-newsletter contains small farm events, career and funding opportunities, farms for sale, and latest resources. smallfarms.cornell.edu.

Pennsylvania Association for Sustainable Agriculture, PO Box 419, 118 West Main St., Millheim, PA 16854. This organization publishes a quarterly newsletter, *Passages*, which addresses issues and information related to sustainable food and farming systems. PASA sponsors research, conferences, and tours related to sustainable agriculture. There is an annual membership fee.

Prepared by Elaine Tietjen, freelance writer, and James C. Finley, associate professor of forest resources. Revised by Penn State Extension Renewable Natural Resources staff.

Cover illustration by Doug Pifer. Illustrations on pages 2, 3, 4, 6, and 7 by H. Smith.

extension.psu.edu

Penn State College of Agricultural Sciences research and extension programs are funded in part by Pennsylvania counties, the Commonwealth of Pennsylvania, and the U.S. Department of Agriculture.

Where trade names appear, no discrimination is intended, and no endorsement by Penn State Extension is implied.

This publication is available in alternative media on request.

Penn State is committed to affirmative action, equal opportunity, and the diversity of its workforce.

Produced by Ag Communications and Marketing

© The Pennsylvania State University 2013

Code UH098 4p/14pod

The Forest Stewardship Program is administered nationally by the USDA Forest Service and is directed in Pennsylvania by the DCNR Bureau of Forestry with assistance from a statewide steering committee. The Forest Stewardship Program assists forest landowners in better managing their forestlands by providing information, education, and technical assistance. For more information about program services, contact the Pennsylvania Forest Stewardship Program, DCNR Bureau of Forestry, PO Box 8552, Harrisburg, PA 17105-8552; phone: 717-787-2160. For more information about publications, contact the Pennsylvania Forest Stewardship Program, Department of Ecosystem Science and Management, 416 Forest Resources Building, University Park, PA 16802-4705; phone: 800-235-9473.

