Often, when people buy a small farm they simply want someone to tell them what they can “do” with it. As strange as it might seem, this isn’t an easy question to answer. When landowners begin to make important decisions related to the use of their property, they might not recognize the complicated web of details involved. Before making decisions, you should consider these major factors that interact with and influence each other (Figure 1, page 2):

- Goals for the farm
- Physical resources of the farm
- Family resources and skills
- Type of farm enterprise and crop produced

For instance, the type of soil on a farm influences what crops can and cannot be grown, which in turn influences the level of gross farm income. Also, the farm owner’s skills for (and enjoyment of) working directly with consumers might influence the farm’s marketing technique (direct marketing versus wholesale).

Small farms are like any small business. They often require long hours, long-term commitment, and stamina. And like many highly successful small businesses, they require a risk-taking, entrepreneurial spirit.

Goals for the farm

The owners of small farms vary in both resources and aspirations. Many people are interested in having a few animals, growing some fruits and vegetables, and providing a high-quality rural lifestyle for their families. Others seek to manage a small farm intensively to produce supplemental or total family income.

The goals you set for your small farm must realistically consider the feelings of family members, your financial situation, the farm or business-related talents family
The major components involved in a farm enterprise decision and how they interact with each other.

Farm Goals
- Hobby or lifestyle
- Tax deferment
- SupPLEMENTAL or family income

Farm Resources
- Land—Soil types and capabilities
- Water—Irrigation
- Climate and microclimate

Enterprise or Crop
- Production technique
  - Conventional
  - Organic
  - Sustainable
- Crops
  - Traditional
  - Specialty or exotic
- Marketing
  - Wholesale
  - Direct to consumers

Family Resources and Skills
- Finances
- Credit
- Family skills and desires
  - Labor
  - Farming, business, and marketing skills
  - Risk-taking ability
  - Lifestyle desires

Figure 1. The major components involved in a farm enterprise decision and how these factors interact with each other.

members have (or don’t have), and more. Consider these questions:
• Do you view the farm as a “hobby” and a way to achieve quality of life for the family?
• Are you simply trying to keep the agricultural tax deferral?
• Do you want the farm to produce a supplemental or even a full income for your family?

Small farms as a hobby
Rural areas are attractive places for families to live. A great deal of satisfaction can come from experiencing farm life without the pressure to make a profit. In this situation, money from off the farm supports the farm’s activities.
In addition, many small-farm families wish to replace some of their purchased food with home-raised foods. This can be extremely satisfying and surprisingly easy. Two
acres will produce a year’s supply of vegetables, ample fruits and berries, some meat, and possible opportunities for small cash sales. Another 2 acres of well-managed woodlot can heat a well-constructed house indefinitely. This path is different from a commercially focused farm, but is very appropriate for many families.

**Agricultural deferral**

Many small farms are located in areas that are not zoned exclusively for farming. These properties are subject to higher property taxes if they are not kept in farm use. The agricultural property-tax deferral lowers the property tax burden of farms that are not located in exclusive farm use areas but are producing income from farming.

In order to receive and maintain the deferral, these farms must meet certain income tests. For some property owners, this requirement results in the ag deferral dilemma. In this situation, people sometimes spend $2,000 to save $1,000 on their taxes. How do otherwise rational people get into this bind? Either they misunderstand how the system works, or they don’t get good numbers.

To qualify for the agricultural property tax deferral, you must show the following annual income:

- 0–6 acres: $650 minimum
- 6.1–29.9 acres: $100/acre
- 30 or more acres: $3,000 minimum

You must demonstrate the minimum income 3 out of 5 years. The assessor can request a copy of the “Farm Schedule F” from your federal income-tax filing to evaluate your claim for deferral.

Here is a hypothetical situation:

<table>
<thead>
<tr>
<th></th>
<th>No deferral</th>
<th>With deferral</th>
</tr>
</thead>
<tbody>
<tr>
<td>Value of house:</td>
<td>$125,000</td>
<td>$125,000</td>
</tr>
<tr>
<td>Value of homesite:</td>
<td>70,000</td>
<td>70,000</td>
</tr>
<tr>
<td>Value of 10 acres:</td>
<td>100,000</td>
<td>5,000</td>
</tr>
<tr>
<td>Total:</td>
<td>$305,000</td>
<td>$200,000</td>
</tr>
<tr>
<td>Difference:</td>
<td>+$95,000 in assessed or taxable value</td>
<td></td>
</tr>
</tbody>
</table>

Let’s assume the tax rate is $18/$1,000. (Your assessor can tell you your specific tax rate.) What you actually would pay
What Can I Do with my Small Farm?

Each year in additional property taxes without the ag deferral is $18 x 95 = $1,710. Note that the homesite, house, and any buildings are not affected by the ag deferral.

It’s important to find out from your assessor what the assessed value of your land would be with and without the deferral. Then do the above calculation on your own property and decide where you come out.

Finally, if you convert all or part of the property to non-farm uses, you most likely will be liable for back taxes at the difference between the ag deferral value and market value for the previous 5 years, even if you just purchased the property. This consideration can be an important item to look at before you buy property.

The income tests for the ag deferral are not connected to the separate (and usually steeper) income test that a county might require before a dwelling can be built on agricultural land.

Timber land deferral has a similar impact on property taxes but doesn’t require annual income proof after the stand is planted. Growing trees for timber could be considered for all or a portion of your rural acreage.

There might be tax incentives to manage your property as wildlife habitat. Under the “Wildlife Habitat Conservation and Management Program,” landowners can retain their agricultural assessment when they enter into a management agreement with the Oregon Department of Fish and Wildlife.

This program is entirely voluntary, and counties are not required to accept applications for it. To qualify, the property must be zoned as agriculture or mixed farm and forest use and must be within a participating county. Contact your county assessor for more information.

Supplemental or family income from the farm

Farming in order to produce a supplemental or family income is serious business. It should be approached with thorough planning and realistic expectations. Consider these questions:

• Are you realistic about how much income you expect?

• Who will do the work?

• Do you have or can you obtain the necessary business skills to help the farm succeed?

On most small parcels, land prices are disconnected from the value of the land for use as a farm. Most small parcels sell for their real estate market value rather than for what a conventional farmer would consider a “fair farm” price. Compare the rental value ($35–175/acre/year) with the actual cost of buying land, which probably is much higher.
It therefore is challenging to expect such a parcel to pay for itself, much less the cost of the house or other nonfarm improvements. However, with intelligence and persistence, it is possible to make money from a small farm. A lot of exciting small farms in the region are producing excellent crops and are marketing in creative ways. The potential definitely exists.

Let’s look at some of the options. Table 1 shows the gross income/acre of a variety of crops as reported from farms, both large and small, in Oregon. These values are for sales via wholesale markets and do not represent the higher gross receipts from direct marketing, a technique used by many farmers. It is possible to make money from a small farm. A lot of exciting small farms in the region are producing excellent crops and are marketing in creative ways. The potential definitely exists.
small farmers. These values offer excellent comparisons and are a good place to start.

If you are seriously considering a crop, you should know the equipment requirements and develop a cash-flow budget for each year in the production cycle. Pay particular attention to harvest and marketing costs. For example, blueberries usually cost 22–28 cents/pound to harvest and transport. A heavy crop requires more up-front cash for harvesting and delivering the crop to market than does a lighter crop.

What stands out from Table 1?

- Clearly, there are a lot of options to generate $100/acre. As your expectations go up, the crop choices that will meet those expectations diminish, and the investment and skills needed increase. If you want to generate gross sales of $1,000/acre, beef, hay, or grains are not viable options. Other crops do show significant income potential.
- Assume the direct operating expenses on most crops are 50–60 percent of gross sales. For example, how much will it take to raise an acre of nursery stock? You must include capital investment in facilities (such as greenhouses and winter houses) as well as all operating expenses (fertilizer, labor, crop protection products, and marketing costs). This is cash up front, and $5,000 to $9,000 is a bare minimum!
- The profitability of any farming enterprise, large or small, is very difficult to predict. You must identify what you mean by profitability. Does it mean just staying in the black for a specific crop? Does it mean providing a small supplemental income? Does it mean providing a full family income? Small farms can provide all of the above, given good resources and skills.

The physical resources of the farm

Not all farms are created equal. They vary widely in the types of crops they can grow. A farm’s capability to grow various crops is related to its physical resources: soils, access to irrigation water, and climate. These physical resources might seriously restrict the types of crops that can be grown or might provide nearly unlimited options. Successful farming includes the ability to match crop options to your farm’s capability.

Land—types of soils

Soils are complex mixtures of sand, silt, and clay. The relative abundance of these soil components determines which soil type you have. The types of soils on your farm
are directly related to crop options. The better your soil, the more options you have. Poor soils can be improved by enhancing drainage and soil tilth but never will be as versatile as good soils.

West of the Cascades, a challenging soil type is one that is largely clay and, as a result, drains poorly. Such soils cannot be cultivated early in the spring and can contribute to root disease problems in many crops. Installing drain tile can partially correct poor drainage, but it adds $800–$1,000 per acre to the cost of the land. Very sandy soils drain excessively and present special problems, but you would much rather have a soil drain well and add water through irrigation than have it drain poorly.

East of the Cascades, saline or alkaline soils can limit crop options.

Soil maps are available that allow you to identify the exact soil types on any parcel. These maps are published in soil surveys for each county. Soil surveys include descriptions of each soil type that give some indication of the soil’s strengths and weaknesses for agriculture and forestry. Contact your USDA Natural Resources Conservation Service office for the soil survey for your area. You can find their phone number under Department of Agriculture in the federal government section of the phone book.

You are far better off with 5 acres of great soil than 50 acres of mediocre soils. However, you might need a certain critical acreage to produce some crops economically. For example, growing grain on less than 200 acres would not support the purchase of even a used combine. While garlic can be produced on small plots (¼ acre or less) using hand labor and a rototiller, 5 acres probably is needed to justify a fully mechanical operation.

In addition, your farm’s location can have a large bearing on your marketing options. Does it have good road access? It must be appealing to the public if you are planning direct sales. If the crop you grow requires a semi-truck for transportation, is your farm able to handle it?

Water—potential for irrigation

Water is another critical resource that determines crop options for your farm. Most, although not all, high-value crops require irrigation. Nurseries are heavy users of irrigation, as are vegetable operations. Christmas trees, wine grapes, garlic, and in certain situations, raspberries and strawberries, can be grown without irrigation.

Various Extension publications detail crop water-use requirements at various locations in Oregon. The estimates take into account irrigation method, crop growth stage, and weather (see page 16).
In Oregon, water resources are controlled by state authorities and are distributed to landowners based on historic use and the quantity available. This system prevents one landowner from damming a river that serves many other landowners. The recent regulations supporting salmon recovery often require higher minimum stream flows during certain seasons, further restricting water withdrawals for irrigation.

The ability to irrigate is based on your farm’s water rights. Water rights determine whether your farm may access water—and how much—from wells, rivers, or other bodies of water.

If you do not have water rights, you might not be able to get them. Check with your local water rights authority about water rights attached to a particular parcel or about restrictions on the development of new water rights in your area. It is illegal to use a domestic well for irrigating a commercial agricultural crop.

Water-quality concerns such as salt content, pH, or specific minerals in the water can affect its suitability for irrigation. Ask for a detailed water analysis when purchasing a water right.

**Climate and microclimate**

Climate and microclimate are important to farming. An area’s climate refers to the generally predictable patterns of temperature and rainfall across the seasons. Your climate zone limits the crops you can grow (such as bananas or apples). This limitation generally is based on the plant’s ability to survive the area’s temperature extremes and the potential for enough heat to mature the crop. Some crops require the accumulation of a certain number of heat units (the number of degrees over a critical minimum temperature, taken as the average high and low each day) to mature. Many crops require more heat units than are available in some locations (e.g., certain wine grape varieties cannot be grown in Oregon’s cool coastal climate). For many crops, considerations such as sun exposure, rainfall amounts and pattern, air movement, and frost are critical to success.

The crops already grown in an area are a reasonable indication of climatic limitations. If your proposed crop is not grown locally, there might be some very good reasons for its absence. This does not necessarily mean it cannot be grown, but there might be some significant limitations to its production that you must discover and plan for.

Oregon has two major climatic areas and many variations on these. The mild, maritime climate on the west side of the state favors many crops. It is estimated that more than 800 crops have been grown in the Willamette Valley. Yet the dry summers require irrigation for most high-value crops.

The central and eastern parts of the state have more arid conditions and tend toward extremes of heat and cold.
There you might be limited to hardy, dryland types of farming. With irrigation, however, these areas have numerous crop options.

Be alert to microclimate variations on your property. A microclimate is a particular weather pattern in a small area. Is your property warmer than surrounding farms? Or wetter with poor air flow?

Microclimate is related to how air drains and collects on the land, how natural features such as small bodies of water moderate temperatures, and so on. The tendency for a farm, or an area on a farm, to have early or late frosts, or to avoid frost, is an example of a microclimate. In some instances, a microclimate can make it possible to grow a crop not normally grown in an area, or it can make it impossible to grow some crops that are grown on surrounding farms.

**Type of farm enterprise and crop(s) produced**

The crops you grow and any other services or processing offered by your farm are the products of your farm business. Choosing a production technique, specific crops to grow, and marketing channels requires some thought and planning.

**Production technique**

Currently, several farming methods are used to produce crops. The three most commonly used on small farms are:

1. **Conventional**—utilizes synthetic pesticides and fertilizers and depends on mechanization for most farm practices.
2. **Organic**—integrates farming practices, utilizes organic pest controls and fertilizers, and relies more on labor and low levels of mechanization for most farm practices.
3. **Sustainable**—perhaps a hybrid of the two methods above, sustainable farming techniques minimize synthetic pesticide and fertilizer use and decrease fossil-fuel consumption.

Your choice of farming method will affect the costs associated with establishing and operating your farm, the amount of income from products grown, and how and where the products are marketed.

**Type of crops—traditional or specialty?**

The easiest crops to grow are those that have a long production history in your area. Standard or traditional crops or varieties provide some security. There are no surprises besides weather and prices. If a crop has been grown in your area for a long time, there will be equipment, custom
operators, and plenty of free advice. These products include familiar options such as tomatoes, corn, sheep, and so on.

Growing a diversity of crops can spread the risk of changes in the growing environment or market price in a given year. There is a risk, however, in trying to grow too many crops, particularly if they require very different skills and equipment.

When you begin to look into specialty or nontraditional crops, you must spend much more time on research. These crops might be new to your area or on the cutting edge for the nation. Such crops might include medicinal herbs, exotic livestock, or varieties of traditional crops new to your area. New crops might have little production information available. There will be a lot of on-the-job learning ahead of you. The consolation is that when you have perfected the production system, assuming the product appeals to the public, you will be ahead of your competition.

Some small farmers are able to grow specialty crops profitably. However, marketing is critical to their success. As with any enterprise, it is necessary to do a good job assessing wholesale and retail customer demand. You have to decide where to sell the product and how to maintain markets and customers. These crops always are difficult to identify and generally involve a higher level of risk than traditional crops that already are well known in the market.

Before you invest any significant amount of money in a crop, you should know the crop’s biology, production technology, and marketing options in some depth. You should be able to put together a cash flow and enterprise budget for your particular farm for each crop. In many cases, it’s possible to grow the crop on a small scale to give you a feel for production issues. However, difficulties tend to compound as the size of the cultivated area increases. Sometimes you can hire yourself out to a farm producing the crop and thereby gain invaluable experience. It’s important to read everything you can get your hands on and to talk to all sorts of people about the enterprise you’re considering. Understand thoroughly and use the traditional production system for growing a crop before making major changes.

Look for parts of the production system you can contract out while you learn the rest of the process. For example, you could learn to grow container nursery stock by buying rooted cuttings at first rather than building a greenhouse and propagating the cuttings yourself.

Look for enterprises that can grow incrementally (without major new investments in land or equipment) as your skills, finances, and marketing ability increase. Examples include container stock, Christmas trees, fresh vegetables, and beehives.
Crop rotation (not growing the same crop on the same land each year) can be important in some crops for disease management and weed control. Rotation requirements can quadruple your acreage needs.

**Marketing**

Small farmers generally are at a disadvantage competing against large farmers in the wholesale market. Large farms usually are able to produce greater volumes of product over a longer time period at a lower cost to the wholesale buyer. Therefore, most successful small farmers choose to market their product directly to consumers via one or more of the following methods:

- Roadside stands
- Farmers’ markets
- Community supported agriculture (CSA) or subscription farming
- Restaurants and public institutions
- Websites
- Other direct-marketing techniques

There are many exciting examples of small farms that profitably produce nursery stock, high-quality small fruits, culinary and medicinal herbs, specialty livestock, tree fruits, vegetables, and numerous other crops. Often, there is a value-added component to the enterprise, such as jam production from fruit. Farms might include nontraditional services such as farm-based bed and breakfast operations. A small farm with a high-quality product mix and a good plan for getting those products into the hands of consumers can do exceedingly well.

**Family resources and skills**

When committing to a hobby or for-profit farm, a number of financial resources and skills are necessary for success.

**Finances**

Farming, like any business, involves financial risk. All crops require you to spend money in advance to establish the crop. What is returned when the crop is harvested is determined by the skills of the farmer, the weather, and what happens in the market. Some crops, such as tree fruits, might require several years before any income is realized. Knowing in advance where you stand financially and your capacity for risk taking will influence the types of choices that best fit your situation. Consider the following questions.
• What can you invest in startup and operating costs without putting your family at financial risk?
• How long can you wait for the crop to begin to create some cash flow? How long can you wait for the crop to generate some profit?
• How much can you afford to risk financially to fluctuations in the market? If the market price is high when you plant but low when you harvest, what will happen?
• How much time and money can you allocate toward “selling” your crop? Most farmers will not plant a crop that does not have a reasonably predictable market.
• What financial obligations are you taking on with the farm? Make up cash flow and enterprise budgets and evaluate them against your experience often.

Credit
Many people think there is money waiting to be given to “exciting” new farm ideas. Nothing could be farther from the truth. The farm credit crisis of the early 1980s took some banks totally out of agricultural lending and made the remaining banks much more selective. The federal government sometimes is a lender of last resort, but that role has diminished greatly.

For most small farmers, financing is available only after they can show several years of successful experience. If you are a new farmer, expect to finance your enterprise from other resources for several years. If you have a good track record with one or more crops, you might be able to get a loan to try a new crop.
When you do decide to seek financing, what are some of the issues you face?
• Many small farmers are terrible record-keepers and simply cannot back their claim to creditworthiness on their production capabilities. Lenders want tangible evidence that you can produce and sell at a profit.
• Experience is the hardest quality to prove and the most difficult one for a lender to assess. A documented 3-year progressively successful personal track record for the crop in question is the best information you can bring to the table. Learn to keep meticulous records and analyze them from a business perspective.
• Small farmers represent a large part of the potential credit market in terms of numbers but not in loan volume.
• From a bank’s perspective, the earning potential from a large loan is much greater than that from a small one. (The same time and paperwork are needed for both.)
• It probably takes a farm loan of at least $50,000 to be profitable for a bank if it isn’t secured as a personal loan.
(since a farm loan requires asset appraisal and significant financial analysis). On the other hand, personal loans of any size are hard to get without a strong credit history and a stable nonfarm income flow.

- Many small farms lack “bankable” equity. A small farm might be well capitalized with two incomes but have little hard collateral or loan history.

- If the first mortgage on a property is large relative to a conservative estimate of liquidation value, it might be tough to get operating capital as well.

- Lenders look for a capacity to weather mistakes, market changes, etc.

It is not impossible, by any means, to secure credit, but it takes a lot of planning, no fiction, and a solid record. As a practical matter, many small farms expand into new crops on personal credit cards. This method is risky and expensive, but often the only path available.

When you obtain money, make it work productively for you in the business. Analyze every decision. Don’t buy a tractor because you like to smell diesel. Any asset (time, money, skills, or equipment) needs to be employed for the greatest benefit of the business.

**Family skills and desires**

Whether your enterprise fits your family’s goals and abilities is a big factor in its success. For example, families often take on a farming enterprise based solely on financial factors. They might discover they really do not enjoy the crop they grow, and the work becomes drudgery. Here are some things to consider:

**Use your strengths**

- What do you love to do? Growing a crop that you enjoy working with and believe in will get you through hard times and help you market it. Don’t force yourself into a type of farming based solely on external factors. If your real love is working with animals, you might not be happy owning a nursery.

- What do you know how to do? Farming is made up of many important skills—mechanical, bookkeeping, management, and so on. Involve yourself and other family members in farming tasks for which they have some related training.

- What do you do well? People have a variety of abilities—for example, a knack for nurturing calves or growing bedding plants.

Christmas trees, wine grapes, garlic, and in certain situations, raspberries and strawberries, can be grown without irrigation.
Be aware of how you and your family want to live

- Check into the production calendar for the crop you are considering. How do you feel about the schedule? Does it fit with off-farm work schedules? Does your family like to take a long vacation during the summer? How important are holidays? For example, if you plant Christmas trees, harvest is likely to interfere with some winter holidays.
- How many hours and what months of the year do you want to work on the farm? It’s easy to work incredibly long hours on a farm. What about the social activities your family likes?
- What is your comfort level with risk? Do you thrive on a bit of it or does it scare you? Some crops pose little financial risk but promise little income. Other crops have the potential for high profits but pose very high levels of risk.
- Direct marketing usually involves a lot of contact with people. Do you like dealing with people?
- Is the whole family excited about farming? Moving to a rural environment can cause stress to family members that prefer a more urban lifestyle.

Some other factors to consider

Farm community. An active farm community promotes group learning, innovation, and cooperation. Quality suppliers of equipment, services, and information are more available where there is a “critical mass” of farmers. Nevertheless, isolated farmers can join commodity organizations and take other steps to improve their technical and marketing skills.

Isolation. If you are isolated, you must carry larger parts and supply inventories, and, most significantly, you probably cannot contract as easily for custom farm work. Thus, you must have the ability and equipment to do all of the work yourself. This requires a much higher up-front investment in capital, time, and skills. In addition, it will be more difficult to attract buyers for the crop.

Labor pool. Many horticultural crops are very perishable and must be harvested and marketed in a timely fashion. Access to reliable and productive labor can mean the difference between success and failure. Are you comfortable managing labor? Are you willing/able to supervise and do the additional paperwork involved with having employees? Can you pay for labor before you are paid for your crop?

Access to markets. This factor is crucial for the small farmer who must get a high percentage of the crop dollar to survive.
Summary
Small-farm operators develop economic vitality by:
• Having a passion for what they do
• Watching their cash-flow cycle
• Producing crops for small but well-paying markets
• Utilizing diverse marketing outlets but understanding the costs of low-volume locations
• Marketing aggressively and creatively
• Searching out and using information to reduce production and marketing risks
• Understanding that there is a learning curve to new enterprises and not expecting to make any money for several years
• Investing in good soils and water
• Locating near a major population center on a paved road
• Employing used (versus new) equipment and being able to do at least preventive maintenance on the farm
• Using contractors to carry out some capital-intensive parts of the enterprise in the beginning
• Matching work to the family’s time, desires, and abilities
• Diversifying sources of earnings, including off-farm income, to produce a solid, year-round cash flow

Successful enterprises are exceedingly well managed and focused on a profitable marketing niche.

Resources and references
Many OSU Extension Service publications may be viewed or downloaded from the Web. Visit the online Publications and Videos catalog at http://extension.oregonstate.edu/catalog/

Copies of our publications, videos, and DVDs also are available from OSU Extension and Experiment Station Communications. For prices and ordering information, visit our online catalog or contact us by fax (541-737-0817), e-mail (puborders@oregonstate.edu), or phone (541-737-2513).

Sustainable Vegetable Production from Start-up to Market. Vernon Grubinger (NRAES-104).

Websites
National Sustainable Agriculture Information Service. Appropriate Technology Transfer for Rural Areas (ATTRA), National Center for Appropriate Technology (http://www.attra.org/)
Food and Farm Connections. Washington State University Cooperative Extension (http://smallfarms.wsu.edu/)
Oregon Small Farms. Oregon State University Extension Service (http://smallfarms.oregonstate.edu)
Small Acreage Fact Sheets. USDA Natural Resources Conservation Service and Washington County Soil and Water Conservation District (http://www.oacd.org/)
Small Farm Center. University of California-Davis (http://www.sfc.ucdavis.edu/)
Small Farms. Cornell University (http://www.smallfarms.cornell.edu/)
Small Farms @ USDA (http://www.usda.gov/oce/smallfarm/hotlinks.htm)

OSU Extension publications
CPA Computer Software (helps growers compare profitability and economic feasibility of perennial crops), PNW 001-CS (1997).
Marketing Alternatives for Specialty Produce, PNW 241 (revised 2000).
Soil Sampling for Home Gardens and Small Acreages, EC 628 (revised 2002).
Western Oregon Irrigation Guides, EM 8713 (2000).

Enterprise budgets are available for a variety of crop and livestock operations. They are available from county offices of the OSU Extension Service, the OSU Department of Agricultural & Resource Economics (541-737-1399), and the Web (http://extension.oregonstate.edu/catalog).