



Growing Your Range Poultry Business: An Entrepreneur's Toolbox

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FOREWORD AND ACKNOWLEDGEMENTS

This Toolbox was produced by the National Center for Appropriate Technology (NCAT) and the Kerr Center for Sustainable Agriculture as part of a Heifer International project to enhance the opportunities to expand range poultry businesses.

The three-year project also examined the use of mobile processing units (MPUs) for poultry. MPUs are an infrastructure development tool for establishing small regional processing plants to serve range poultry producer groups. A state-licensed MPU was built in Kentucky. Issues surrounding meat inspection regulations and infrastructure were examined in Alabama and Mississippi. The project included additional reports on nutrition, stock, custom processing plants, and legal issues. Refer to Appendix G: Project Summary for more information.

NCAT and the Kerr Center thank the Community, Food, and Agriculture Program and the Natural Resource, Agriculture, and Engineering Service at Cornell University for permitting adaptations from the booklet *Farming Alternatives: A Guide to Evaluating the Feasibility of New Farm-Based Enterprises* (1988) (see References section to order). The authors of that booklet are listed along with the primary authors of this Toolbox.



Photo by Luke Elliott

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The National Center for Appropriate Technology is a nonprofit organization with offices in Butte, MT, Fayetteville, Arkansas, and Davis, CA, that has programs in sustainable agriculture, energy, and communities. NCAT promotes the economic well-being and quality of life of urban and rural residents while working to conserve America's natural resources.



The Kerr Center for Sustainable Agriculture is a nonprofit education foundation in Poteau, Oklahoma with a mission to encourage sustainable agriculture.



Heifer International is a nonprofit organization dedicated to community development through sustainable livestock production. The headquarters is in Little Rock, AR.



Photo by Karen Machetta

USING THE TOOLBOX

This Toolbox is written for anyone who desires to make a profit from range poultry production, whether by direct-marketing “pastured poultry,” building a processing plant, or working cooperatively with other producers. The audience includes:

- New producers
- Existing producers who want to expand
- Individuals
- Groups
- Small processors

It is not written for contract poultry growers who work with large companies; they generally cannot consider another poultry enterprise because they are already committed.

This Toolbox can help you:

- “Pencil out” a range poultry enterprise
- Determine the profitability of an existing enterprise
- Understand the basics of feasibility and business planning
- Find additional information and assistance

Limitations of the Toolbox:

- You should seek additional information and assistance to do a thorough feasibility study, business plan, or marketing plan.
- You will need to do lots of legwork.
- This publication does not provide technical information on production, processing, and meat inspection regulations, but it tells you where to get it.

- The focus of this publication is broilers but much of the information can be applied to turkey and egg production

Budgets are a special feature of this Toolbox. Range poultry budgets are usually limited to small-scale “pastured poultry” operations that use on-farm processing, but this Toolbox provides budgets for different scenarios based on the production system and the type of processing. Worksheets provide a template to help you with number-crunching.

INTRODUCTION

There is growing consumer interest in pasture-raised poultry products, and many small-scale producers have established successful enterprises. These producers take full advantage of federal exemptions that, in many states, permit farmers to sell 1,000 broilers per year directly to consumers without inspection. These operations are usually seasonal, closing down in winter. Producers net about \$2.00 to \$3.00 per bird and make a small supplementary income. See ATTRA’s *Sustainable Poultry Production Overview* for details.

Some producers are content to stay small, but others want to expand to earn more money. They usually need access to a



A small-range operation can be a good business.

licensed processing plant. The consolidation of the meat processing industry in recent years has resulted in fewer plants that

will do custom processing, which limits the opportunity for small producers to sell inspected meat. This situation leads individuals and groups to consider building a plant. In a 1999 NCAT survey of range poultry producers, 82% said they intend to expand their businesses, and 38% were interested in building a government-licensed processing plant ¹.

Small range poultry producers who live in states where exemptions allow on-farm processing without inspection and who get a good price from local markets have a real advantage. They must think hard about a decision to expand. Expansion brings with it the risks of a substantial investment in processing facilities and ties up working capital.

Enterprises are often stretched to the breaking point by lack of labor and capital. Planning is a crucial entrepreneurial skill needed to avoid this strain. Planning is tied to goals, so first be clear on what your goals are. You can use the Range Poultry Decision Trees in Appendix A to help you make decisions.

If you plan to limit your enterprise to small-scale production with on-farm processing and direct marketing, you may be interested only in parts of this Toolbox, such as the Budgets (located in the Appendices). For those planning to move beyond direct marketing, the sections on feasibility and business planning are particularly important. This Toolbox focuses on feasibility—the business plan will be much easier if the feasibility work is done first.

Not planning, or “grow as you go”

Some range poultry producers do not plan for profit because it is not really a goal. In fact, money is not always one of the main reasons people farm. Range poultry production may have other, indirect benefits, such as improving pasture fertility, increasing farm diversity through an enterprise with low entry costs, establishing a family work ethic, involving youth, and so on. Many range poultry producers are in operation because they passionately believe in the product, the system, or the philosophy. For some it is a hobby and they gain personal satisfaction from producing and selling the product directly to customers ².



Range poultry production is a way to build community. Photo by Heifer International.

Some producers do accounting after sales to see if they made a profit—too late to plan. Some do not keep records at all and may not know how much money they are earning from their range poultry enterprise.

Many producers who direct-market grow only in response to customer demand. Since these producers are not taking as high an investment risk as someone building a government-licensed plant, feasibility and business planning is not as important to them.

“Pastured poultry” is an easy business to enter. According to pastured-poultry founder Joel Salatin in Virginia, you can get into production for the price of one \$200 pen and \$500 for a used or homemade scalding/picker set-up. Run four batches of 100 birds through the pen and, even with 10% mortality, you will pay back the \$700 investment the first year and still have \$400 cash after paying the costs of feed and chicks³. (This assumes you can sell your chickens for \$6.50 each.) This assessment reflects the low entry cost, though it does not include the cost of management and labor.

Most producers recommend starting small if you are processing on-farm and direct-marketing. Processing is hard work—it will “buckle your knees,” according to one producer.

Using a Mobile Processing Unit (MPU) is a way to start small and spread the equipment cost among a group of producers. It offers the chance to develop the product, test market, and iron out production problems. The group can later establish a small permanent plant.

Producers who process on-farm and direct market often see a real limit to the amount of birds they would even *want* to produce since it is a very labor-intensive enterprise. Many do all the labor, from brooding and grow-out



Mobile Processing Units are shared by small producers. Photo by APPPA.

to processing and marketing, as well as all the management involved in dealing with hatcheries, working out feed arrangements, evaluating processing equipment, and so on. In addition, the poultry enterprise is often part of a diversified farm with other enterprises that require time and effort. The desired level of production for these farmers may be no more than 1,000 broilers per year because that is all they currently have time for. Year-round production may also hold little interest. Outdoor processing on the farm is not an option in winter because of cold temperatures—plus, the winter break is usually welcome. If these producers do expand, they probably need to do it in a different way. For example, they could join a collaborative group that has a central processing facility and just raise birds.

Larger-scale production is more difficult to enter. The risk is higher but the potential is there for higher income.

Feasibility and Business Planning

Many farmers are not familiar with feasibility studies, business planning, or marketing plans. A producer who has a great track record in terms of production may not have strong planning skills or



may neglect the marketing side of the business.

A feasibility study looks at “make or break” issues that would thwart a sound business. It also provides a framework to be used in a business plan.

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Planning will help ensure success and guide decision-making. Like other start-up businesses, new range poultry operations face

challenges and may have a high failure rate. For most new businesses, “only 20% of start-ups are in business after 5 years”⁴. A business plan will help guide your decision-making; it includes analysis of how the business will work and plans for operation (marketing, production, human resources, finances, etc.). It is also a written document necessary for obtaining a loan and sharing with potential partners, but “the really important thing about this process is that it forces you to think”⁵. It is more important for the producer than anyone else, including loan officers.

Most producers start with a “mind map.” It is the unwritten plan that directs your activities and contains untested hypotheses and assumptions. It differs from a business plan in that it is not based on research⁶. It is a start—and a very important start—but formal planning will fill in blank spots in your information. “A plan not written down is only a dream we hope will come true.”

According to Luke Elliott⁷, former owner/operator of a small USDA-inspected processing plant, “It can be easy to market

your first 1,000 to 1,500 birds directly off the farm. People actually seek you out and come to the farm. Beyond that, it is important to develop a marketing plan, to work with other producers, and to make certain of the legality of your situation.”

FEASIBILITY

“Feasibility” is a broad term and the methods for determining it vary. A feasibility study may examine technical, economic, market, and social feasibility. For many producers, small-scale production constitutes a feasibility study—a test run for production and marketing at a larger scale.

This Toolbox uses (with permission) the outline and concepts for feasibility studies from the award-winning booklet *Farming Alternatives: A Guide to Evaluating the Feasibility of New Farm-Based Enterprises*⁸. The discussion of feasibility in this Toolbox illustrates the following concepts with range poultry examples:

- Personal and family considerations
- Marketing—Can you sell it?
- Production—Can it be done?
- Profitability—Will it make money?
- Financial—Can you afford to do it?

If you prefer a worksheet format for your research, *Farming Alternatives* has many useful ones.

Other useful resources are *Is Your Agribusiness Project Feasible?*⁹ and *A Primer for Selecting New Enterprises for Your Farm*¹⁰.

PERSONAL AND FAMILY CONSIDERATIONS AND CHOOSING AN ENTERPRISE

Questions about you, your resources, your preferences, and your potential tend to get overlooked. Why embark on an enterprise if



Make sure the whole family is committed to the poultry business. Photo by Gwen Roland.

you don't have time or if it would stretch your family resources too far? Is the whole family interested? Do you have the skills and experience necessary to do it? What are the strengths, assets, and interests within your family? Someone may be the natural marketer.

Is your goal supplemental income or a farm centerpiece that supports you⁸?

Inventory:

When deciding on an enterprise, it is important to consider the farm resources you have, or refer to farm inventories you have done in the past. Inventory the following:

- ⇒ **Land:** What are your physical resources? Describe your tillable land, pasture, and water resources. Will you use the land concurrently for both poultry and cattle or other enterprises?
- ⇒ **Buildings, machinery, equipment, and other farm resources:** What is the condition of the facilities and equipment? Can you rent or borrow machinery or storage facilities? Do you have freezing capacity? Are there useful by-products you have access to?
- ⇒ **Management and labor needs:** Who will perform management duties such as decision-making or supervising?

Who will do the necessary labor to raise birds, process, book-keep, etc. How much labor will be required? Does the enterprise use existing labor in off-seasons? Is seasonal labor available?

⇒ **Marketing resources:** How can you distribute your product? You may be able to create your own market, but what are the markets presently available? What are the options for direct marketing? Do you have road frontage, a farm store or stand, storage capability, or a farmers' market? What are the resources beyond direct marketing? Are there slaughtering/processing facilities and wholesalers? What is the nearest town? What is the population within a 30-mile radius?

⇒ **Financial resources:** How much money are you and your family willing to put toward a new enterprise⁸?

Enterprise preferences:

Planning can allow you to choose the job you want to do.

You may be set on a range poultry enterprise that includes raising day-old chicks, processing them on your own farm, and then marketing the dressed birds to customers from your farm. You may want to produce eggs or turkeys as well as chicken.

On-farm processing and direct marketing can be a good combination for small producers. It requires equipment, labor, and know-how for processing, but there are no travel costs to a processing facility and no custom processing fee. Many diversified farms are always on the



What kind of buildings are already available on your farm? Photo by Steve Muntz.

look out for profitable enterprises that can be easily and sustainably incorporated into their systems. A producer who is already grazing cattle may decide to add range poultry since the land is already available. This is called a *supplementary* enterprise since it uses existing labor and facilities. A *complementary*

enterprise actually benefits other enterprises. For instance, a cattle producer might consider a range poultry enterprise in light of its contribution to pasture fertility for cattle forage. Products can have complementary marketing relationships. Poultry and eggs are products that direct marketers use to attract customers to the farm, who then buy pork, beef, vegetables, and crafts.

However, over-diversification is a danger for family farms. This can happen fairly easily given that many “sustainable agriculture” enterprises are relatively inexpensive to enter. Luke Elliott⁷ recommends that if you expand to the point where you are building a plant, do not try to continue doing all the production, processing, and marketing yourself. Consider collaborative arrangements.

You may be interested in establishing a state or federally licensed processing plant—more a small agribusiness than a farm-based business—and custom processing for producers. Processing can also be diversified. Being set up for beef, pork, or wild game could allow a processing business to operate year-round. Value-adding by further processing—for example, making

sausage—could be another business opportunity.

As you move from on-farm direct marketing to a more “off-farm” enterprise, the business gets more complicated. For example, consumer demand, meat inspection regulations, and poultry processing capacity and location all affect the ability of an off-farm enterprise to make a reasonable level of income¹¹. It becomes tricky when you try to make this a primary enterprise. A rule of thumb is: either stay small or collaborate.

Collaborative efforts can also allow more job specialization. You may prefer to raise birds for a group and avoid processing and marketing. Or you may prefer to do producer education for the group. In the future, you may decide to focus on breeding, hatching, milling feed, pullet-raising, processing, or some other specialized stage of production, or on marketing poultry products. You might even focus on by-products, such as composting poultry offal from processing. You may realize that your resources are better spent in an enterprise other than range poultry. For example, many of the considerations for a poultry processing plant are similar to those for milk processing. Would you and your family prefer making cheese to processing chickens? Refer to ATTRA’s *Evaluating a Rural Enterprise* for more options on types of enterprises.

Marketing is one of the first areas to consider in evaluating feasibility. You need to understand your market, your competition, and relevant consumer trends, and you need to be able to project potential sales volume and prices. If there

is not a market for the product, there is no economic reason for continuing with the feasibility study⁸. The outline used in this section is adapted from *Farming Alternatives: A Guide to Evaluating the Feasibility of New Farm-Based Enterprises*.

MARKETING—WILL IT SELL?

Some questions you need to answer are: What are you selling? Who will buy the product? What is the best way to market it? How will you distribute it? What is the demand? How strong is the competition? What are future trends likely to be? What prices are you likely to receive? What volume are you likely to sell⁸?

A market should be secured before production begins; on the other hand, it is difficult to market until you have a product. Poultry meat and eggs in particular require planned production and marketing because they are perishable².

Product Definition

Define your product by looking at the following areas:

Product and service features:

Describe the product, noting its range of sizes and other characteristics⁸. For



If there is no market for the product, there is no need to continue the feasibility study. Photo by Luke Elliott.

example, will your pasture-reared chickens be sold as broilers or roasters; natural or certified organic; fresh or frozen? Describe any related services. Will the birds be whole or cut-up? Will you sell parts? (You will also need a market for the less-desirable parts.) Will you provide recipes? Do you have a service-oriented business such as a custom processing plant or custom roasting of soybeans for poultry feed?

Marketing season:

Will you provide the product year-round? Will the poultry be fresh all year or will you freeze it in the winter?

Benefits to buyer:

Identify the real reason someone buys your product⁸. They may buy for gourmet taste or for welfare—they may find the idea of chickens roaming free on pasture appealing. They may also buy for health reasons (e.g., to avoid the growth promotants used in conventional meat production).

Capsule description:

Put it all together⁸. Example: “Pasture King Farms offers fresh pastured broilers in season, and frozen broilers in the winter, to customers who enjoy the taste of birds raised on green pasture with natural feeds.”

Market Research

Without hard data, marketing is just opinion. You don’t need special training to do market research—it’s a matter of asking the right questions in the right places⁸. Market research methods can be divided into:

- Secondary research—using existing information on demographics, consumption, future market trends, etc.

- Primary research—do-it-yourself⁸.

Secondary research:

There’s not a lot of published data for innovative products such as range poultry, but the amount of information on the natural and organic markets—among the fastest-growing in the food sector—is increasing. The Hartman Group in Bellevue, Washington, conducted a national study in the mid 1990s to assess consumers’ attitudes and behaviors about the food they eat—in particular, sustainably produced food. They found that 52% of consumers want to buy “green”¹². The organic foods industry reached almost \$8 billion in total retail sales in 2000, with 20–25% annual growth from 1990 to 2000¹³. ATTRA has more information on the natural and organic markets.

Primary research:

Since you cannot find all the answers to your marketing questions through secondary research, plan on conducting some do-it-yourself research⁸. Some common methods of primary research are summarized below. You may even be able to get students from a local business school to help you.



Calling customers.

- ⇒ **Observation:** Count people, products, or events in a way relevant to your enterprise. Your opinion is critical, especially about your own community.
- Surveys:** Do written or telephone surveys⁸. A dot poster is an interesting way to survey groups at a farmers’ market; participants simply place stick-on dots on a poster to indicate their preferences.

- ⇒ **Personal interviews:** Interview chefs, potential buyers, and others⁸. The interviews can double as a promotional technique. You probably already know the white-tablecloth restaurants in your area; Zagat's¹⁴ restaurant guide, can help you identify them in other cities.
- ⇒ **Test marketing:** sell your product on a small scale to evaluate potential sales⁸. Many producers use a small operation as a test market for larger production.

Your research will inform the issues you need to address in assessing your market.

Assessing Your Market

To understand and assess your market, examine the following topics.

1. Target Market Descriptions

"Your 'target market' includes the people or businesses that you are trying to attract. Understanding the characteristics of a target market can prevent costly mistakes in developing and promoting your product"⁸.

Describe the demographics of people you want to sell to (age, sex, family status, income level, class, occupation, children, marital status, ethnic group, education). Do your customers live primarily in a certain area or region? Lifestyle patterns (common interests, values, behavior, personality types, attitudes, buying motives) are important⁸. Typical buyers of range poultry products are health-oriented; potential customers may belong to a health club or they may be runners. A sample demographic statement is: the typical range-poultry buyer is a married female with two children, lives in a two-



Restaurants that serve haute cuisine usually require fresh product.

income household, has a college education, and belongs to a health club.

Besides selling directly to consumers, you may plan to sell to restaurants, brokers, stores, etc. Talk to these potential customers to find out what they want. For example, a store may require a year-round supply of inspected poultry at a particular volume. How well do you know the restaurants you want to sell to? Oregon producer Aaron Silverman¹⁵ suggests marketing to chef-owned restaurants that offer seasonal, haute cuisine.

In addition to natural foods stores, consider family-owned specialty stores or meat markets.

2. Marketing Options

You need to decide what methods you will use to get the product to your markets⁸.



Customers may come directly to your farm to buy pasture-raised chicken.

Producers who sell directly to consumers use on-farm sales, farmers' markets, special events such as fairs, roadside stands, the Internet, mail-order, etc.



Attractive packaging for range poultry products in France.

You also can sell directly to restaurants, stores, schools, or other institutions or sell to them wholesale through brokers or distributors. A broker does marketing for you and checks that the store is properly presenting your product. Small brokers in your community may serve only a few businesses. Large natural foods distributors include Tree of Life and United Natural Foods.

You might decide to join a collaborative group such as a cooperative. Market development may depend on shared

Fresh vs. frozen meat

Fresh and frozen meat are two different markets and require different distribution channels. Consumers are accustomed to seeing only fresh meat in most supermarkets, but many natural foods stores do not have a fresh meat counter. Restaurants usually prefer fresh meat delivered once or twice weekly. You can sell fresh meat to restaurants and then market frozen meat as a secondary product to other channels. There is a stigma against frozen meats, but it may be possible to establish a marketing strategy that promotes a frozen sustainable product over a fresh, unsustainable product.

marketing with other producers. “Certain market channels may require larger volumes or longer seasonal deliveries than can be provided from an individual operation”⁽¹⁰⁾. Other partners, such as local retailers and consumer groups, may have a shared interest in developing market opportunities for the product.

It is not prudent to have only one market outlet. What kind of commitment have buyers made? Personal relationship is important, but you may need a contract with area buyers in order to expand your capacity. You don’t want to increase your production only to have your customer decide not to buy. Producers who direct-market to individual consumers have the advantage of many market outlets.

Can you meet the requirements for serving your markets?

- What does the packaging need to look like? Will you need to bar code products for stores?
- Distribution is especially important: Will you need to transport your product to the market? What is the distance? Do you have a truck? Can you load it fully? Don’t underestimate the importance of distribution or, as Luke Elliott says, “Don’t drive 200 miles to sell 25 chickens.”
- Consider market entry: How will the product be introduced to the market? Will it be marketed under the producer’s name or the processor’s name? What kind of advertising and promotion will get the buyer’s attention?¹⁰

3. Existing Market Demand

How many potential buyers are included in

Related publications available from ATTRA (free of charge):

Sustainable Poultry: Production Overview

Organic Livestock Feed Suppliers

Range Poultry Housing

Pastured Poultry: A Heifer Project International Case Study Booklet

Legal Issues for Small-Scale Poultry Processors (a Heifer Project International publication)

Label Rouge: Pasture-Raised Poultry in France

Profitable Poultry: Raising Birds on Pasture (A SAN publication)

Poultry Processing Facilities Available for Use by Independent Producers in the Southern Region

Feeding Chickens

Stock

your target market at this time? What is the average purchase or frequency of service per buyer per year? What is the total purchase or number of services per year”⁽⁸⁾? Small producers who market directly to consumers report good demand for their product.

4. Competition

Analyze your competition: business reputation, estimated sales volume, quality of product, price, customer satisfaction, appearance, type of buyer targeted, strengths, and weaknesses. A “direct competitor” offers the same product you do. “Indirect competition” is anything your customers can substitute for your product⁸. Although range poultry is a different product, conventional poultry may compete indirectly. In fact, there is a lot of consumer confusion about natural products. Consumers may not understand the difference between pastured poultry and an industrial specialty product from Petaluma’s or Tyson’s organic line.

5. Market trends

Has consumption been increasing? Is the number of competitors increasing? What

are your projections for market trends in the next five to 10 years?⁸

Possible trends include:

- **More cut-up products and parts:** Some producers are finding that the same educated, sophisticated customers that buy their pastured poultry also demand convenient cut-up products.
- **Natural and organic markets continuing to grow** in conventional grocery stores.
- **More distinction in the marketplace:** Range poultry products may need to be further distinguished from conventional products in the marketplace. The conventional industry has reduced the use of routine medication in feed in



Cut-up chicken will be important for specialty products in the future.

response to public concern, and is getting involved in “free-range” and organic production. Producers who market directly to customers can educate them about the products, but as producers move beyond direct marketing, opportunities such as slow-growing genetics and air-chill processing can help to further distinguish products.

- **More emphasis on grassfed meats:** Organic production has been co-opted by large industrial companies, but few use truly land-based production systems. The industry is able to fulfill organic certification requirements at a much lower cost than the small grower. However, the industry cannot produce a grassfed poultry product the way a small producer with mobile housing can. As consumers catch on, they will look for grassfed products, which have different nutritional qualities or higher omega-3 fatty acids. Grassfed meats can be more of an opportunity for small producers than for large industrial ones.
- **Consumer education:** More specific definitions of outdoor poultry production systems by USDA will help reduce confusion so consumers can make informed choices, as will the development of certification programs that have consumer education components.

6. *Expected price*

There are many formulas and strategies for setting prices. What is the lowest price you could receive? What is the highest price? What conditions would create this? What is your expected price? Ultimately, pricing will reflect your competition, costs

Three books are popular among poultry producers:

*Pastured Poultry Profits*¹⁷
*Free-Range Poultry Production and Marketing*¹⁸
*Chicken Tractor*¹⁹

of production, quality, service, convenience provided, and types of buyers targeted⁸.

Farmers tend to underprice their products. According to Silverman, charge the highest price you can from the beginning¹⁵. “When you first start, there are so many inefficiencies you can’t charge the real price because no one would buy it. If it all sells, the price is too low. At least 10% of people should walk by shaking their heads.”

It is important to know how pricing affects your profit margin—good record-keeping and profitability analysis will help.

7. *Expected sales volume*

What minimum number of units could you sell in a poor year? In a good year? What would create these conditions? What is your expected sales volume? How long will it take to build the market to the desired sales volume?⁸

PRODUCTION— CAN IT BE DONE?

For many, the easiest and most enjoyable part of poultry production is raising the birds. This section looks at technical, social, and organizational obstacles to raising and processing birds.

In studying production feasibility, you need to determine if you can reasonably provide

the product from available resources—you may discover problems in production. It is important to gain “a thorough understanding of specific production practices, required resources, production constraints, yields, and legal and liability considerations. If your available resources cannot adequately support the enterprise, development may not be feasible. However, many production problems can be overcome by an infusion of labor, capital, or ingenuity”⁸.

Sources of production information

Range poultry production and processing require a lot of technical information. As of yet, land grant universities and cooperative extension have limited information on small commercial outdoor flocks or small poultry businesses. Range-poultry producers often rely on each other for information, learning from other successful producers through Internet discussion groups and other networks. The American Pastured Poultry Producers Association (APPPA)¹⁶ is a source of information, as is the PasturePoultry listserv at <www.groups.yahoo.com>. Sustainable agriculture conferences, trade shows, and equipment suppliers can also be good sources of information.

Although you can read materials and books, experience is an even more valuable resource. Starting a small test operation or

doing an internship with another farmer can provide experience. Refer to ATTRA’s *Sustainable Farming Internships and Apprenticeships* for more information on farm work opportunities across the country.

Production Requirements

Consider the following production requirements, adapted from *Farming Alternatives: A Guide to Evaluating the Feasibility of New Farm-Based Enterprises*.

Climate requirements

Consider the high and low temperatures and annual precipitation expected on your farm; list any anticipated climate problems⁸. For example, cold winters in the North and hot summers in the South can limit outdoor poultry production. Solutions include seasonal production, solariums, or seasonal confinement. Rain, wind, and temperature swings are also important considerations. Some areas have long wet seasons that limit range production.

Soil and land requirements

What are the soil pH, moisture/drainage, fertility, and acreage requirements to grow adequate forage for your birds (or cattle and sheep)? What does your land provide? List anticipated problems such as steep terrain that can interfere with moving portable poultry housing. Heavily wooded areas may increase predator

Common types of outdoor poultry production systems

- *Yarding*: a stationary house with a fenced yard; buildup of manure and pathogens in yarding has led farmers to search for ways to rotate pasture.
- *Pasture pens*: small batches of birds are kept in floorless pens, which are moved daily to fresh pasture.
- *Net-range or “day-range”*: a house is surrounded with movable net fencing. The netting is moved every few days and the house may be moved as well.
- *Free-range*: portable houses are moved regularly to fresh pasture—no fencing is used.

pressure. If you are planning a processing plant, consider the ability of the soil to support wastewater systems.

Water requirements

Consider the water requirements of the enterprise, including the flow rate, volume, and location (g). How does the water need to be distributed for production and processing? Are you on municipal water or a septic system? Evaluate your water quality.



Building and facility requirements

Consider the facilities needed for the enterprise for housing, processing, handling, and storage. Is new construction or renovation required for your existing facilities?⁸ Housing for range operations is often minimal, built with available resources on the farm. Processing set-ups are varied. You



could process under a tree, use an existing outbuilding, build a shed, or even put up a government-licensed processing plant. Or you could rent a mobile processing unit (MPU). You could take your birds to a custom plant for processing but you do lose control of the

product. Facilities are also required for cold storage and possibly for retail of poultry products. If you or your group builds a plant, siting is critical. You will need to transport inputs to the plant, transport the product to market, and transport wastes away. While a rural area offers land for wastewater disposal, transportation is easier and labor is more available in an urban area. Most importantly, put a plant where you are wanted. For example, Aaron Silverman's plant is in an Oregon town that lost a lumber mill. Siting in an Empowerment Zone can provide resources. The Empowerment Zone and Enterprise Community program²⁰ is a federal assistance program that helps communities with high poverty rates find opportunities for growth and revitalization, especially entrepreneurial initiatives, small business expansion, and training for jobs.

When coordinating the stages of production, remember that the processing plant is usually the limiting facility and all other facilities (such as the hatchery, grow-out, and feed mill) must be geared to the processing plant¹⁰.

See ATTRA's *Small-Scale Poultry Processing* for information on building and operating a plant.

Equipment and machinery requirements

Consider whether you already own the equipment or must buy, rent, borrow, or make it⁸. Consider heaters for brooding, pasture pens (or net fencing and electric chargers), feeders, waterers, and feed storage. You don't actually need a lot of processing equipment for poultry; birds are small and there is no need for a track and a saw. Consider carefully before

buying used equipment; it may not meet the exact specifications needed and therefore lead to less efficiency or higher labor costs²¹. (Used equipment may also not satisfy meat inspection requirements.) At what point should equipment be substituted for labor (the “mechanical transition threshold”)? Keep replacement parts around for emergencies and keep future equipment upgrades in mind.

Marketing equipment may be needed, such as a refrigerated truck or trailer to transport dressed birds to market. Also consider supplies such as litter to raise birds on and bags for marketing. If you are milling your own feed, you may need a grinder, mixer, and roaster.



Management and labor requirements

⇒ **Management:** The function of management is to plan, organize, direct, staff, and control. Considerable knowledge and diverse skills are needed. Managers should keep abreast of innovations



in poultry production systems that improve efficiency and profits. It takes many hours of management time to gather information on breed, hatcheries, feed suppliers, affordable processing equipment, and so forth.

If you are building a plant, you will put in lots of management hours going over regulations, design, and other aspects. For operation, small plant managers need an impressive array of skills—including electrical, plumbing, knife sharpening—to maintain the plant and equipment, especially for emergency breakdowns during processing. In addition to supervising the facility and ensuring compliance with regulations, the processing-plant manager might be expected to monitor performance, judge quality, buy live birds, oversee accounting-office functions, oversee waste disposal, and be a marketing and salesperson. Many producers underestimate the amount of time and effort needed for marketing⁸.

⇒ **Labor:** How much labor will the day-to-day activities of raising, processing, and marketing poultry, and keeping records, require? The philosophy of free-range and organic poultry production often reduces the options

for automation, resulting in very labor-intensive operations, especially with processing². Direct marketing requires substantial labor to build a customer base and maintain a database to track them.



Pasture-raised poultry can be very labor intensive.

- ⇒ **Labor budgets:** Record the management and labor hours you will need for your operation. As a guide, the budgets in the Appendices of this Toolbox include management and labor hours needed for the four different production and processing scenarios described; however, these are not detailed labor budgets. You will need to modify them to fit your situation. Make a chart of labor activities on the farm for each month to determine if there is time available for a new or expanded enterprise⁸. Since many poultry producers have diversified farms, it is important that the poultry enterprise complements rather than conflicts with the labor peaks of other farm enterprises. Consider what type of chore cycle will work for you: steady work or intensive bursts of work.

According to University of Wisconsin estimates²², one

experienced farmer spent only 10 minutes per chicken from chick to processed bird; a less experienced farmer worked more than an hour per bird.

- ⇒ **Labor efficiency:** The size of the operation is the main determinant of labor efficiency². Producers need to spread labor costs over a larger number of birds to increase output per labor unit. (See the Sensitivity Analysis discussion under the Profitability section.)

Some automation may be needed to optimize labor input. Automation reduces time needed for feeding, watering, cleaning, and other activities², but requires more capital investment.

- ⇒ **Labor source:** The farmer's own unsalaried labor is often a large part of the labor in a small poultry operation. Family labor is common; however, kids cannot be expected to work as hard as adults.



Automation can optimize labor input but costs more.

Hired labor is required for some activities. Many producers have trouble obtaining processing help on-call in rural areas, and it will not be trained labor. An Oregon company has considered an unusual option:

using prison labor to run a spent-fowl plant.

Later, in a business plan, you can be more specific, naming who will be on your management team, including salaries and benefits. You may also need a hiring and training policy. How will you promote and maintain good labor relations, strong morale, and high-quality output from workers? Handling of employees is an important issue. Show that you have organized your staff needs²³. If you incorporate, you will need to name a Board of Directors.

Additional production requirements

⇒ **Supply:**

Consider your supply sources⁸. For year-round production, chicks are harder to source in winter. Sourcing suitable feed ingredients can be difficult. If you have difficulty finding a reliable supplier of chicks, feed ingredients, feed rations, or other needs, you may want to consider becoming a supplier yourself.

⇒ **Reliable supply:**

If you have a processing plant, consider how you will get a sufficient supply of live birds to support the plant year-round. What will the travel time be from the farm to the plant? Will you raise all the birds yourself? If not, survey producers in your area to determine whether they can provide an adequate supply of birds. However, local producers may prefer to process on-farm and market their own birds instead of working with

Uniformity and consistent quality

Although uniformity in bird size is not as important in manual processing as it is in automated processing, it is still an issue. Consistency can be very important in your market. For example, your restaurant accounts may demand a range of 3.5 to 4.5 lb. birds every order. Silverman found that his birds varied so much in weight—because of the heavier finished weight of males compared to females—that he switched from straight-run chick orders to cockerels only. When feed rations change dramatically, it can change the quality of the meat. Feeding more corn will result in more yellow color in the bird and different fatty acids and flavor in the meat compared to wheat feeding. Meat from birds confined in winter will differ from meat produced outdoors in spring. The production system used also has an effect: birds tend to grow faster in pasture pens compared to net-range systems because the feed is right in front of them all the time. However, birds are often injured when pasture pens are moved, and there may be more broken wings. Weather, forage, weed species, and other environmental factors have an impact on the consistency of poultry in land-based production systems.

you. What kind of future-supply assurance do you need? Are contracts necessary? A reliable supply is crucial when you are committed to fill an order.

When working with multiple growers, you will need to require standardized production practices, including stock selection and feed formulation. You may need to develop a producer education program and have them start out small. Silverman limits



beginning growers to 1,000 birds their first year of production.

⇒ **Logistics of working with multiple growers:**

For a plant that processes 120,000 birds per year, if the average grower produces 5,373 birds/year, there will need to be a minimum of 23 growers close to the plant. The production schedules of these growers must be coordinated so that birds arrive at the plant for processing at staggered times instead of all at once. Harvesting an entire flock at a time allows you to manage the flock as a unit. This “all-in, all-out” approach also has health advantages: in multi-age flocks, older birds can carry diseases that younger birds are susceptible to. On the other hand, the grower can “skim” flocks to fulfill market orders that require a range of sizes. Biosecurity measures (footbaths, disinfecting of vehicles, traffic control, etc.) are important for reducing the spread of disease when working with multiple growers. If a plant has a truck that picks birds up from different farms, the truck should visit younger flocks before older ones. Some supply chains do

not permit flocks to be more than seven days apart in age on the same farm.

You might plan to operate your plant as an independent custom processor—rather than collaborate with a group. However, the financial risk of building a plant will be high if you aren’t sure that enough producers will want to use your processing services to make your plant profitable (and to keep cash flowing).

Because the storage capability of most small plants is limited, you will most likely need to move and market your product quickly. If you don’t have a lot of freezer capacity, you may be able to rent freezer space elsewhere.

Quality and production rate

What is the level or range of quality you expect to achieve? How does your quality compare with your competitors’? What rate of production do you think you can achieve?⁸ Range-poultry producers usually plan on an eight-week grow-out period using the commonly available fast-growing broilers. However, specialty slow-growing genetics may take 12 weeks to grow out, which reduces the number of flocks a grower can raise per year.

Processing rates depend on many factors. On-farm processors typically handle 10 birds per hour from kill to chill (i.e., a crew of four could process 40 birds per hour), excluding set-up and clean-up time and packaging. In a small processing plant, Kansas processor Diana Endicott²⁴ estimates that an experienced crew of four can

process a bird from kill to box in four minutes (15 birds per hour), excluding set-up and clean-up time and paperwork. MPUs have more set-up and take-down time than other options.

Poultry usually dress out at about 67% of live weight at processing (without giblets), but track your yield. It affects your bottom line, and different batches may yield differently.

Business size

You might want production to equal the expected sales volume you determined from your market research⁸. However, growing a business in stages could be more feasible.

$\frac{\text{Expected Sales Volume}}{\text{Average Production Rate}} = \text{Maximum Business Size}^8$
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Business size is expressed in terms of birds raised per year on farm or number processed per year, week, or day. If you are planning a big investment, it is critical to make an accurate estimate of your business size. “Once you’ve determined the maximum size of the enterprise, you will take into account the availability of your resources”⁸.

There may be certain economic thresholds where you need to either produce at a low volume or commit to a higher volume. In-between is no-man’s land. As mentioned before, size is also related to labor efficiency. Paperwork for 10 birds or 500 birds requires the same amount of time. Set-up and clean-up take time, regardless of volume. See the Sensitivity Analysis in Profitability section.

Legal, regulatory, and liability factors

*The Legal Guide for Direct Farm Marketing*²⁵ by attorney Neil Hamilton is an excellent resource for information on legal, regulatory, and liability issues.

Legal:

The Legal Guide for Direct Farm Marketing has information on legal structures for your business (e.g., sole proprietorship, partnership, limited partnership, corporation, limited liability company [LLC], or cooperative). When working with a collaborative group, formal arrangements such as contracts are useful for smoothing operations and for legal and financial protection for all. You may want to find an agricultural lawyer (a county clerk or a lawyer referral service can help).

Regulations:

Regulations you will have to follow include rules for meat inspection, environmental impact, and labor.

Meat inspection regulations are notoriously difficult for small poultry producers, and an “unclear legal environment increases risk”⁸. All meat and poultry sold in the U.S. is inspected by federal or state inspectors (27 states use their own state meat-inspection program). However, federal exemptions allow custom processors and small producers of less than 1,000 birds per year or less than 20,000 birds per year to process a limited number of birds without bird-by-bird inspection. In states that do not have a state meat inspection program, the federal exemptions apply, but they are not recognized and interpreted the same in these states. States that have state meat inspection programs do not recognize the exemptions. *Legal Issues for Small Poultry*

*Producers*²⁶ was developed by Heifer International and summarizes meat inspection regulations on a state-by-state basis. It is available free from ATTRA or at <www.apppa.org>.

Operating under federal exemptions for facilities that process less than 20,000 birds per year usually requires an enclosed building that meets state building codes, with smooth washable walls and floors, an approved waste system, a restroom, etc. Under federal regulations, poultry processing plants also must have a Pathogen Reduction and HACCP program.

Certification programs:

Certification programs have many requirements but can be good marketing options. Certified organic production is now subject to the regulations of the USDA National Organic Program²⁷. If your annual gross sales are less than \$5,000, you are exempt from certification but you still must follow the rules and keep records for a possible audit.

Environmental and Labor Regulations:

Operators must also comply with environmental regulations, and an environmental assessment may be needed.

On the farm, you need to think about disposal of mortalities and litter. The conventional poultry industry's disposal of litter by field application is increasingly regulated, and nutrient management plans are becoming common. This is not an issue for most

outdoor poultry operations. On these smaller, dispersed farms the manure is an asset rather than a liability. However, composting of mortalities may be an issue for small producers.

In the plant, you need to think about disposal of offal and wastewater. Small on-farm processors usually compost offal and apply wastewater to their land, but on a larger scale, composting of wastes such as offal, feathers, and blood is time-consuming and subject to regulations. Large amounts of wastewater “cannot simply be discharged into lakes and rivers because of the relatively high content of organic matter such as protein and fat and the microorganisms present²⁸.” Processing plants may need at least initial water treatment before discharging into a municipal sewage system. Or more extensive water treatment facilities may be required—breaking down dissolved organic matter by microorganisms—before final discharge to sewer, streams, or land. One small processor recommends siting your plant in a small city that needs jobs and has a good sewer.



You may also face labor regulations such as minimum wage, workman's compensation, and Occupational Safety and Health Administration (OSHA)

regulations on ergonomic issues. It is important to be aware of such regulations on federal, state, and local levels. You may have to deal with several agencies, including USDA, your state department of agriculture, your state department of health, your state department of environmental quality, and local agencies. Remember that it takes time to jump through regulatory hoops.

Liability:

Liability coverage is important for your protection. If you have an existing farm liability policy, just add a rider. A stand-alone policy may be more expensive.

Contracts are useful for certain production and marketing arrangements. If you are setting up contracts with other growers, check resources such as the Livestock Production Contract Checklist²⁹.

A good resource for small poultry producers is economic information from the University of Wisconsin²². Based on data gathered from experienced farmers, labor for a 1,000-bird-per-year enterprise is 20–22 hours per week over a four-month production schedule, and the farmer can expect hourly earnings of about \$10 per hour. Based on this analysis, they also created a model for a 5,000-bird enterprise, which would require 35–42 hours of work per week over a six-month production schedule. With a net income of \$18,000, an experienced farmer could expect to earn about \$12–\$18 per hour¹¹.

Consider social issues in your feasibility study. Is this a socially acceptable enterprise? The conventional poultry industry must deal with difficult social issues such as fairness to contract growers and high turnover in processing plants, including immigrant labor.

Will establishing or expanding this enterprise bring you profits? “Profitability is the measure of the return your business receives after operating costs and other expenses are subtracted from income”⁸.

PROFITABILITY— WILL IT MAKE MONEY?

To project whether the enterprise will be profitable, the farm manager should complete an income statement. An income statement lists income and expenses for a given time period, usually a year. “The income statement lists all business receipts (cash and non-cash payment received from the sale of goods or services or other sources) and expenses (operating expenses and depreciation) related to the year’s production. Expenses are then subtracted from receipts, and the amount remaining is net farm income.” Net farm income represents the return to the operator’s labor and management time, unpaid family labor, and equity capital⁸.

Estimating expenses

There are two types of expenses:

- **Capital costs:** Relatively major purchases that are made infrequently. Examples include land, processing equipment, a building for processing, poultry housing, etc.
- **Operating costs:** Recurring expenses

that are a regular part of the production cycle. Examples include feed, chicks, utilities, and interest and principle payment on debt for capital costs.

Increased capital purchases expose you to greater financial risk, while increased operating costs can put you at a competitive disadvantage⁸.

Budgets for building your income statement are provided in the Appendices. They will help you figure costs. There are four budgets for different scenarios, based on the type of production system and the type of processing:

- **Appendix B:** Pasture Pen Budget: Pasture pen production with on-farm processing.
- **Appendix C:** Net-range Budget: Net-range or “Day-range” production with custom processing.
- **Appendix D:** Mobile Processing Unit (MPU) Budget.
- **Appendix E:** Small Processing Plant Budget (Capital budget and operating budget).

Note: With the exception of the Pasture Pen and Net-range budgets, the cost of marketing is not included, so don't forget that the expenses of brochures, signs, samples, advertising, calling prospective buyers, delivery routes, certification fees, and so on can be high.

The numbers in the budgets were compiled by the primary authors, and drawn from several producers. The figures do not apply to a particular producer. Pickwick/Zesco³⁰ provided the prices for processing equipment.

Using the budgets:

Use the budgets as general guidelines. There is space to write your own estimates. Costs will vary depending on the individual circumstances of your operation. Range poultry production is still a new enterprise, and variations in performance, expenses, overhead, market prices, and condition of buildings or equipment will affect the bottom line.

You can use the budgets individually. The Pasture Pen Budget in particular is designed for an individual producer. In the other budgets, however, the areas of production,

Lowering fixed costs by using a plant at full capacity

Normally, a plant should be used at full capacity to be financially viable (i.e., at least 40 hours per week, 50 weeks per year)³³. “A large portion of the financial obligation of the plant is in fixed costs: the physical structure of the building and the equipment. While variable costs, such as utilities and labor, can be reduced during periods of shortages, the cost of the capital investment does not change²¹. If you cannot use the facility at full capacity with only poultry, you may want to consider a multi-species facility. However, your state may not allow red meat and poultry in the same plant. Some producers use a facility at partial capacity—even just one day per week. In this case, the facility should have low fixed costs because these costs will be there every day of the week. It is important to project when the plant will operate at full capacity. If you plan to build a small, simple facility, build it so that you can expand later (especially the waste management system). For an example of a sensitivity analysis of capacity utilization of a small processing plant, see Appendix F.

processing, and marketing are handled as separate profit centers or businesses that an individual or a group can put together. With the pieces working independently of each other, an enterprise may not be profitable. Working with a collaborative group can lower the cost of the enterprise. A collaborative group may not require each profit center to actually make a profit. For example, the processing plant may just break even; the profit will be made when the group markets the product.

Some notes on costs:

- Feed prices affect profitability a lot since feed is the major cost of production; organic feed is especially expensive.
- Mobile housing has a higher annual depreciation cost per bird because it does not last as long as permanent housing.
- Marketing costs depend on the market. A common rule of thumb is that 3% to 4% of total income will be spent on marketing costs.

Since many small-scale poultry operations are complementary enterprises on diversified farms, you may be able to charge some of the costs to other enterprises. For example, the tractor that moves your portable houses may also pull a plow.

Estimating income

Most direct marketers charge \$1.50–\$2.50/lb. for whole carcasses. Larger marketers have more complex pricing.

Another budgeting tool for range poultry enterprises is available from the University of Wisconsin. It is a very detailed budget

Blue Mountain Farm Prices			
	Store Price	Price Delivered	Wholesale
Whole Chicken	\$2.15/lb	\$2.50/lb	\$2.15/lb
Cut-up Chicken	\$2.35/lb	\$2.50/lb	\$2.35/lb
Boneless Breast	\$6.50/lb	\$6.75/lb	\$5.50/lb
Turkey	\$2.25/lb	\$2.99/lb	

and only available as a computer spreadsheet. Contact Don Schuster³¹.

Sensitivity analysis

It is important to ask “what if” questions. Proponents of unique enterprises tend to be too optimistic about potential income. You need to ask: “What if prices are 25% below my estimates? What if I have a weather problem? What if it takes twice as much labor as I think?”¹⁰. What if a lot of chicks die? “Since you know the future is uncertain, you may want to examine different possible price and yield scenarios and see how your strategies perform”³².

A sensitivity analysis is used to determine how changes in various assumptions change the costs of production and processing, which in turn will affect the profitability of an enterprise. Make allowances for worst-case scenarios. After sensitivity analysis is complete, you may want to make adjustments to your income statement to reflect the effects of such changes⁸. Important production costs and determinants of profitability are:

- **Feed cost:** “Feed consumption is directly related to the quality of the



A plant should be used at full capacity to be financially viable. Photo by Steve Muntz.

rearing environment, including housing insulation and time spent on range in cold weather”². Organic feed is especially expensive.

- **Finishing age and the price per bird :** If you plan to raise a slower-growing bird (such as a *Label Rouge*-type bird) it will cost more to get it to the same live weight as a fast-growing Cornish Cross. Although many direct markets will not sustain the higher price needed, other markets may².
- **Operation size and cost efficiencies:** Profit generally increases with scale since larger units can spread out overhead costs. Input costs such as feed and chicks, transport, processing, packaging, and marketing also tend to be higher for small producers because of the small quantities involved². Producers try to lower costs by buying in bulk, charging a premium price, and using family labor². However, small units may not be profitable unless the poultry is processed on-farm and direct marketed. “Smaller units require less capital investment, but housing and labor costs per bird are generally higher than in the case of larger units where economies of scale may be significant”². Larger-scale

production is possible through capital investment, automation, and collaboration between producers, particularly in the area of packing, processing, and slaughtering². See Appendix F for a chart from the U.K. showing the profitability of organic table bird production units of different sizes.

Break-even analysis

Break-even analysis determines the profits possible at various levels of output. “Break-even calculations will show the level of production where the enterprise can cover operating costs for alternative output prices, wages, and costs of raw product”⁹. Some of the budgets show break-even analysis and the unit cost of production (i.e., per-bird cost).

FINPACK is a computer program for financial analysis. Many Extension agents have it and can help you learn to use it. There are numerous publications and Extension fact sheets on preparing and using financial statements.

How much profitability do you need?

It may be that using the numbers in the Toolbox’s budgets do not result in profitability in your income statement.

Profitability measures include net returns per bird, net returns to labor and management, and dollars earned per hour of labor¹¹. A 17–25% margin is often needed to cover fixed costs. The level of profitability you need is related to whether or not you include your labor as an expense. If you do, then 0% profitability could be acceptable—the enterprise breaks even and you have made a job for yourself. The level of profitability is also related to your standard

of living. Some families draw a lot more on an enterprise for their living expenses than other families would and therefore require a higher profit.

FINANCIAL REALITY— CAN YOU AFFORD TO DO IT?

One of the most critical items for a small business is having enough cash to meet needs throughout the year. Even a profitable enterprise can be sunk by cash-flow problems. You need to know how much cash will be needed for day-to-day expenses (operating costs, family living needs, and debt payments) and where the cash will come from (e.g., customer receipts, borrowing, membership equity, other). If sufficient cash is not available, cash flow analysis will tell you the amount of debt you can afford⁸.

A cash flow analysis is a summary of the amount of cash that flows into and out of the business over a given period, generally one year. Monthly or quarterly cash flow statements showing the timing of cash flow are especially critical in an agricultural business, which is seasonal in nature⁸. Winter bills must be balanced out with summer revenue.

By completing a cash flow statement the manager can determine the amount of capital needed to finance the business, as well as the repayment ability of the business if money is borrowed⁸.

You should develop a current cash-flow statement and a series of projected cash-flow statements for the first and second years, and for a future average year. Note

that you need to know your monthly payments on a loan for this exercise.

Most businesses do not turn a profit for the first few years. “A new enterprise with a payoff in five years may look good strictly from a profitability standpoint but may not pay the bills between now and then”¹⁰.

Obtaining financing

You may need to borrow money to start or expand your range poultry enterprise. Lenders want to know: “What is the business idea, and what evidence can you offer to show that there is a market and that it is likely to turn a profit”⁸? They also need to know the amount you want to borrow and if you can repay the money. Financial institutions look at the “5 Cs” (character, cash flow, collateral, conditions, and capital—the owner should be putting up 30–50% of the capital needed⁵. If you are working with a cooperative, can you raise the necessary investment capital from your members? It can be hard to identify sources of financing for nontraditional enterprises. Besides borrowing, you can pursue investors, business angels, or venture capital.

DEVELOPING A BUSINESS PLAN FROM THE FEASIBILITY STUDY

You have gathered a lot of information about your proposed idea; most of the legwork is already done. If the result of the feasibility study is positive, incorporate the work you have done into a business plan.

A business plan can help you get government or foundation funding. It is a communication tool to attract the interest of collaborators and stakeholders. The audience is not only investors and bankers

but also your family, stockholders, directors, managers, employees, suppliers, government, manufacturers, transporters, and wholesalers and customers. Most importantly, the business plan is a planning tool for you. A business plan guides decision-making for the farm business. It will not sit on a shelf after completion. A business plan is an operational tool to put your ideas into practice²³.

Business plan

A business plan includes a business description and an assessment of the environment/market in which you intend to operate, along with the operational plans for business functions such as marketing, production, human resources, finances, and so on. The business description is “a brief description of the Mission Statement, Business Goals, Business Background, Business Structure, and Management Team”²³. It contains target customers and markets, principal products and services, geographic domain, technologies used, philosophy, and desired image. A business plan assesses strengths, weaknesses, opportunities, and threats to the business (SWOT). Range poultry SWOT examples:

- **Strengths:** image, good taste and texture
- **Weaknesses:** expensive
- **Opportunities:** concern about Genetically Modified Organisms (GMOs) in food production, concern about “mad cow” disease, growth in eco-labeling programs such as organic, interest in animal welfare, increasing environmental regulations

in the conventional poultry industry, restrictions on routine antibiotics. Small single-plant chicken companies may be on the outs in the conventional industry, but these plants are an opportunity for a small niche company.

- **Threats:** conventional poultry industry, government policy

The operational plans for business functions can be filled in by the work already done in the feasibility study.

- **Market plan:** (use the information from your Market Section)
- **Production plan:** (use the information from your Production Section feasibility study)
- **Human resource plan:** (use the information from your Labor and Management Section under Production)
- **Financial Plan:** (use your income statement and cash-flow analysis)

You can also add a title page, executive summary, and appendices that include resumes of business owners or key personnel, agreements, etc.

Some business plans are 25–35 pages long, with 10–20 pages of appendices²³. However, they do not have to be long.

A Canadian website has a tutorial on business planning as well as a several sample business plans, including one for a broiler business, at www.agf.gov.bc.ca/busmgmt/. Many books available on small business include information on taxation, zoning, labor and employment, insurance and liability, and entrepreneurial skills. Extension has materials on farm business and agribusiness management.

In presenting your business plan to a lender, you may also need to present profitability; you will need to have a record of your expenses and income. Be sure to record your labor hours. Many small poultry farmers use supporting personal documents such as a net-worth statement and a resume⁸.

RECORD-KEEPING

Plan on accurate record-keeping as a labor cost in the new or expanded enterprise. Keep production records on mortalities, feed consumed, weight gains, feed efficiency, and yield. Record expenses, income, and labor hours (including your own). Many small poultry farmers use a computer, but the work also can be done without one.

Oregon poultry producer Aaron Silverman has expertise in record-keeping and offers consulting services. Marcie Rosenzweig has created a “Spreadsheet Template for Planning and Organizing Information on Diversified Farms³⁴.”

A business plan may require information on the type of accounting system the business will use and the type of inventory control.



Production records will help you to analyze your profitability.

ASSISTANCE AND RESOURCES

Cooperative Extension and NRCS are good places to turn to for help, as are small-business development resources.

It is challenging to do feasibility studies, business planning, and entrepreneurial development by yourself. See ATTRA’s *Adding Value Through Sustainable Agriculture Entrepreneurship: Overview and Resources*, online at <ncatark.uark.edu/~hollyb/ssawg/dir.html> for business development resources. Like other small businesses, farms and processing plants can be eligible for assistance or incubation. *Entrepreneurship Overview and Resources* lists agriculture-based business and farm-management courses such as NxLevel. It also describes competitive funding programs such as the Value-added Development Grants program. For more information on this program, see <www.rurdev.usda.gov/rbs/coops/vadg.htm>. *Entrepreneurship Overview and Resources* has a special supplement for the South: a state-by-state guide developed for Heifer International and the Southern Sustainable Agriculture Working Group. It highlights organizations that will help with market research, feasibility studies, business planning, product development, design of facilities, getting through the web of regulations, and breaking into markets. For example, the Agricultural Development Center³⁵ in Knoxville, Tennessee, provides a team of specialists to assist farmers, entrepreneurs, and business people in the evaluation of value-added ideas, projects, and products based on Tennessee agriculture, aquaculture, and forestry. Successful producers are usually generous with information and their time but need to charge a fee for in-depth help. Aaron

Silverman¹⁵, Tom Delehanty³⁶, and Luke Elliott⁷ can consult on live production, small plant development, and marketing. Jim McLaughlin³⁷ is experienced in pastured poultry and whole farm management. New Horizon Technologies, Inc.³⁸, a for-profit subsidiary of NCAT, can also help with business planning for poultry operations.

State economic development:

Rural development is a priority in some states, where policy-makers have set goals to support value-added livestock enterprises in order to increase economic activity.

Rural economic development funds may be available to assist producer groups in building a multi-species ‘incubator’ type of slaughter facility in which groups could share in the costs and scheduling of the plant. It could be billed as a demonstration project for possible adoption in other geographic areas if it is viable. Small slaughter plant operators may need to seek some sort of regulatory relief from Congress, particularly with HACCP, to maintain a viable industry²¹.

Some states provide assistance with feasibility and business planning, market research, product development, etc. Check with your department of economic development.

Resources:

The American Association of Meat Processors (AAMP)³⁰ had many small locker plants in the past but membership is going down as they close because of consolidation in agriculture. AAMP has expressed interest in involving small

poultry processors. The American Pastured Poultry Producers Association (APPPA)¹⁶ is also a resource.

WORKING TOGETHER

Many pastured-poultry producers are accustomed to working independently, which has certain advantages. “The beauty of an owner-operator who markets his own production is that his communication chain is extremely short”⁴⁰. When you market the product yourself, you keep more control over quality, image, and price. And direct marketing allows the producer to keep all the profits from the sale of the bird. However, it can be expensive for independent producers to take small quantities of birds to a custom processor. Custom processors usually charge \$1.50–\$2.50 per chicken, more if it’s cut-up. Turkeys can cost up to \$8.00 for custom processing.

Collaboration often arises from a need to share resources such as processing equipment, to buy feed and supplies in bulk, or to collectively market the group’s production. In a 1999 NCAT survey, 85% of pastured-poultry producers that responded indicated interest in collaboration¹.



The “lone free-ranger” vs. collaborative work:

When establishing a processing plant, a do-it-yourself approach is difficult. Working together is not only a way to spread resources and reduce risk, but it also helps prevent burn-out. It is hard to be a jack-of-all-trades and handle production, processing, marketing, business management, and more. “You don’t want to have to learn how to run a plant, learn HACCP, and do all the marketing and production,” says Luke Elliott. “It is nearly impossible to handle all aspects of a poultry business once production exceeds a certain volume.” Cooperative groups can pool resources for labor and have greater market clout as a group; they may attract more outside assistance (technical and financial) than individuals. It may take many partners to make something happen.

The *Label Rouge* certification system in France provides an example of farmers working together, along with consumers and government, in a highly coordinated effort. Poultry are reared on pasture and marketed under the *Label Rouge* label. The main unit of cooperation is a coordinated supply chain. *Filiere* is a French term for a supply chain centered around a group of poultry producers with affiliates upstream (breeding company, hatchery, feed mill) and downstream (processor, distributor, retailer). A supply chain can help producers stay more in control of their product. It also helps to spread risk. In addition, a national certification program coordinates the marketing efforts of the supply chains and includes consumer education. *Label Rouge* is a government-supported certification system, created by

farmers and driven by consumers⁴¹. For more information, see ATTRA’s *Label Rouge: Pasture-Raised Poultry in France*.

Cooperatives:

Cooperatives are an important option for structuring a collaborative business. In traditional co-ops, there is a very small initial investment for new members. “New members are usually required to purchase one share of stock, but often for only a very small amount ranging from \$25–\$100. The remainder of a member’s investment will be earned over time in the form of retained patronage refunds. New-generation or limited-membership cooperatives are different from traditional cooperatives in terms of financing. Members must purchase shares of stock that are tied directly to delivery rights to market specific commodities. In these cooperatives, the initial investments are usually significant amounts of money”⁴². Some states have programs to promote new-generation cooperatives.

The USDA Rural Business and Cooperative Development Service <www.rurdev.usda.gov/rbs/> has excellent resources on cooperative development.

USDA RBS cooperative publications available from ATTRA:

Cooperative Services: What We Do, How We Work
How to Start a Cooperative
Understanding Cooperatives: Ag. Marketing Cooperatives
Cooperative Feasibility Study Guide
Cooperative Farm Bargaining & Price Negotiations

PRODUCER PROFILES

Case studies provide real-life examples of how other range poultry producers grew their businesses and the challenges they faced.

Luke and Cindy Elliott: Courageous Pioneers

Luke and Cindy Elliott⁷ in Fox, Arkansas, wanted to farm and raise their two daughters in the country. They started with 200 free-range birds and processed them on the back porch. Meanwhile, Luke investigated meat inspection regulations in his area. He found that Arkansas' requirements for operating under the federal exemptions were almost the same as the federal requirements to operate under full USDA inspection. This fact, along with his belief that regulations will get more restrictive in the future, led Luke to establish a small but federally-licensed slaughter facility. The number of birds he could sell would be unlimited and he could also sell out of state. When the inspector is not present, he can operate as a federally exempt plant, but the number of birds is limited to 20,000 per year and there are ownership and resale restrictions.

Luke obtained funding from a small lender specializing in alternative ventures. He leased a 2,400 sq. ft. building (formerly a quilt factory) in town for \$150 per month, and spent \$45,000 on renovations and \$30,000 on equipment. He started running the plant in 1998 and operated year-round.

The plant is designed to handle 100,000 birds per year, based on 500 birds per day, but he usually processed only one day a week, under inspection. He also did

custom processing for other local free-range poultry producers. Five workers could typically process only 200 birds per day under the inspection protocol. Inspection varies with the inspector; in Luke's case, the inspection process took a lot of time and reduced the line speed.

He grew his business to 5,000 chickens and 200 turkeys per year. He easily developed wholesale accounts in Little Rock of 100 chickens per week and 150 turkeys per year. However, he realized he did not have enough volume to be making the 200-mile round trip to Little Rock and needed to spend more time marketing.

Luke, Cindy, and their older daughter were managing production, processing, and marketing and doing most of the labor. Luke was also working a full-time off-farm job. "We were caught in the classic position of small business owners in that we did not have adequate cash flow or capital to sustain us. Greater sales would have helped but that would have necessitated increased production and even more time and money." Then Luke had a back injury. "There was no time for personal preferences, no time to be ill, no time to rest." They realized they were not getting the quality of life they intended—they did not have family



The Elliots in their production facility.

“It’s hard not to love it.”

—Luke Elliott

time. They made the difficult decision to close their operation. Luke was one of the first range poultry producers

to operate a USDA plant. He has been a resource to others wanting to establish small plants. There are not many small poultry processors who operate under full USDA inspection with Standard Sanitation Operating Procedures (SSOPs), HACCP plan, and required microbial testing and who are willing to share information with others interested in doing the same.

“We learned a lot about ourselves...

Building something like this, putting one’s heart and soul into something and then seeing it not turn out like we intended is a lesson that is not easy to absorb.”

Although times became difficult for the family, they have many happy memories of farm life, working with animals (“raising chickens in moderate dry weather is a joy”), the excitement of operating a plant, and having the courage to live their dream. “It’s hard not to love it.”



According to Luke Elliott, “The stress of operating a full-scale business that included a farm, processing plant, sales and distribution was simply too much to handle without sacrificing what we want most in terms of being really present for our children.” Jennifer Elliott enjoys the chickens, above.

Aaron and Kelly Silverman: Working with a Growing Group

Aaron Silverman’s¹⁵ background is in horticulture. He began using chickens for added fertility and tillage on his 20-acre Oregon vegetable farm. Already selling fresh produce to restaurants, he found an eager market for range poultry and started expanding his operation. He started with 2,000 birds, processing them on-farm. Then he began exploring the state licensing needed to operate under USDA exemptions. It was a challenge because Oregon authorities were not accustomed to working with a small, federally exempt plant. He considered a mobile processing unit but decided against it since it was “already going to be confusing enough for the authorities to license an exempt plant.”

Aaron is leading the way in grower collaboration

Aaron leased a defunct 2,000-sq.-ft. locker plant nearby (built in the 1950s) for \$240 per month. He put \$20,000 into renovating the building and \$40,000 into movable equipment. Since the plant was built to pack hogs, beef, and game, it has a poor layout for poultry processing. The plant is capable of processing 500 birds a day; however, he is processing only two days a week. His wife Kelly helps with packaging and labeling. He sells frozen product in the winter.

Aaron is building his operation in two phases. The second phase will involve moving to a bigger plant that is USDA-inspected. The first phase will allow him to develop systems, marketing, and distribution, and later to make a jump to more birds. It was not feasible to establish a large business at first. A successful proposal

writer, he has received grants to do a market survey at a local farmers' market, to do legal work, to lease a refrigerated vehicle, to do a feasibility study and business plan, and for equipment and supplies.

He increased his production to 13,000 birds of his own, in addition to the birds raised by his business partners at Greener Pastures Poultry, LLC. However, operating under the federal exemption limits his business to 20,000 birds per year. He plans to expand to a larger operation in the near future. He wants to operate under USDA inspection in a plant capable of processing at least 200,000 birds per year, probably working with a group of 25 producers. Growers net about \$1.00 per bird and help with weighing the birds to ensure that the price they receive is accurate. Growers working with Aaron are required to help out with marketing—they give him either 15 cents/bird or 20 hours of time. Greener Pastures Poultry sells to local high-end restaurants, at a farmers' market, and to a natural foods store.

Aaron is leading the way in terms of collaboration. He has a producer education program and standardized feeding, brooding, lighting, sanitation, housing design, density, and field management practices. He limits producers to 1,000 birds the first year so they can get production problems ironed out. And, he has incentives for them.



Aaron Silverman at his plant.

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U.W. Center for Cooperatives
Attn: Publications Section
230 Taylor Hall
427 Lorch Street
Madison, WI 53706-1503
608-262-3981
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Website: www.nraes.org
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800-333-3421
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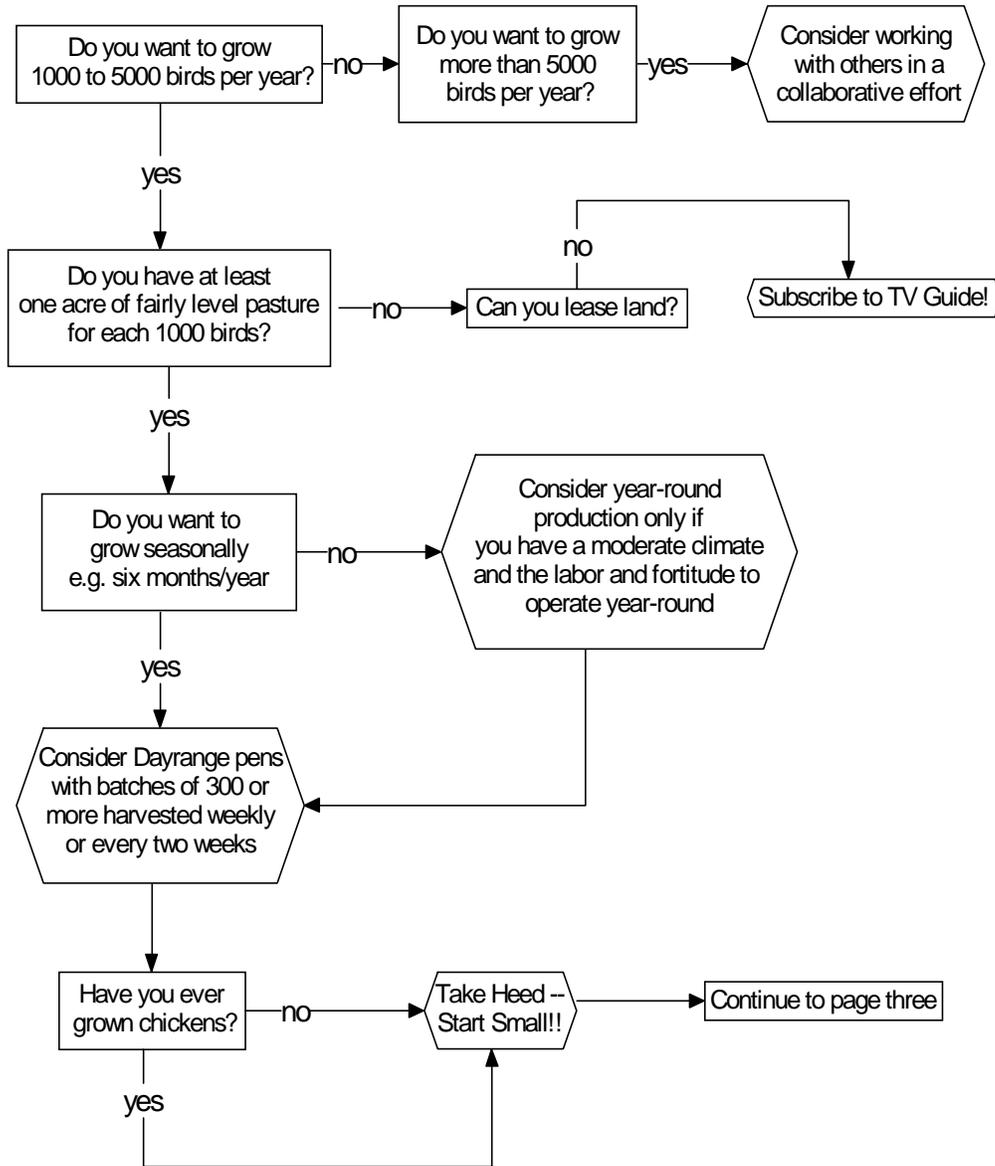
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Chippewa Falls, WI 54729
715-577-5966
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Natures Pace Sanctuary
Hartshorn, MO 65479
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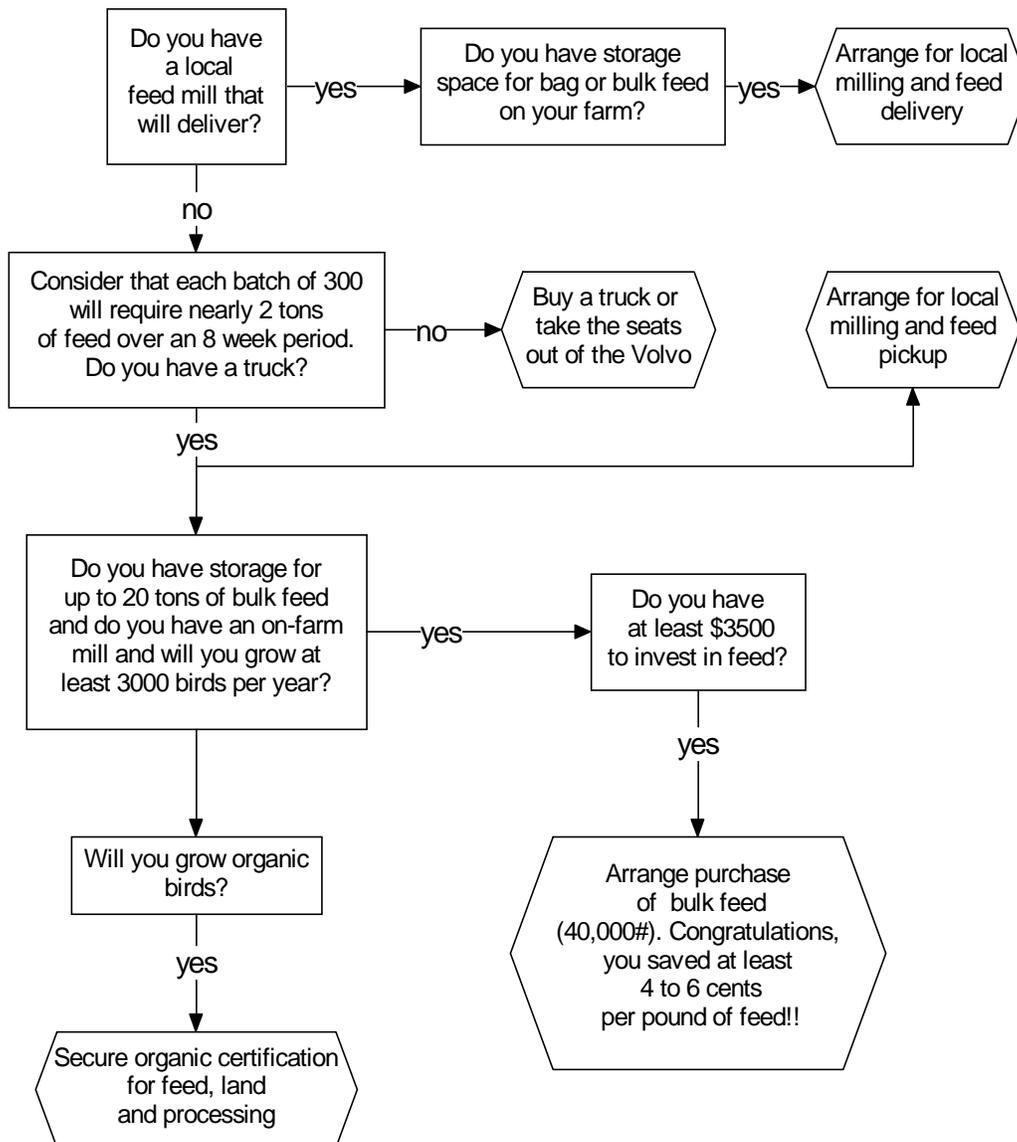
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\$50 for Spreadsheet Template for Planning and Organizing Information on Diversified Farms

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P.O. Box 3657
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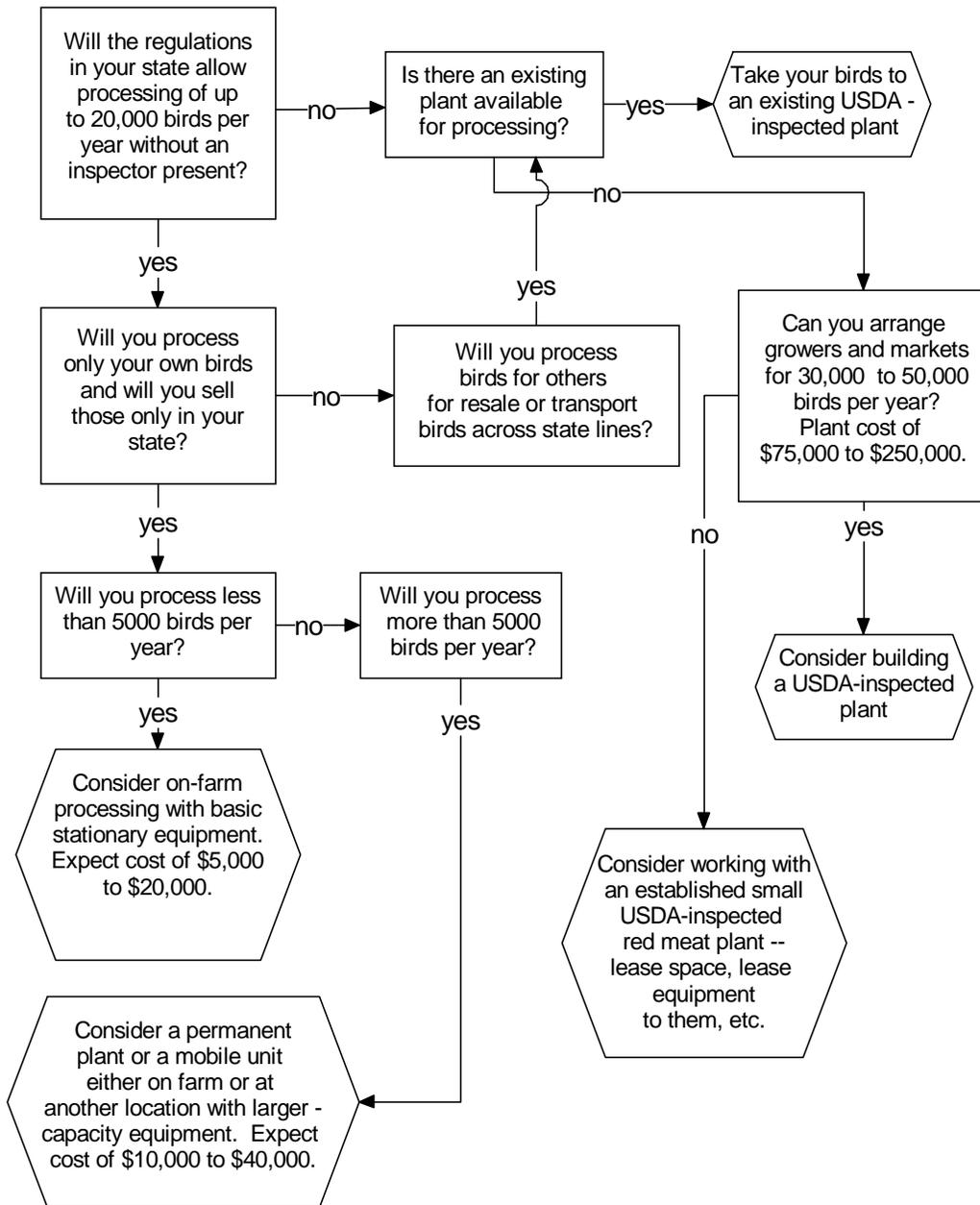
Appendix A (continued)
Poultry Enterprise Decision Tree
Page 2 Production
 Prepared by Luke Elliott



Appendix A (continued)
Poultry Enterprise Decision Tree
Page 3 Feeds
 Prepared by Luke Elliott



Appendix A (continued)
Poultry Enterprise Decision Tree
Page 4 Processing and Inspection
 Prepared by Luke Elliott

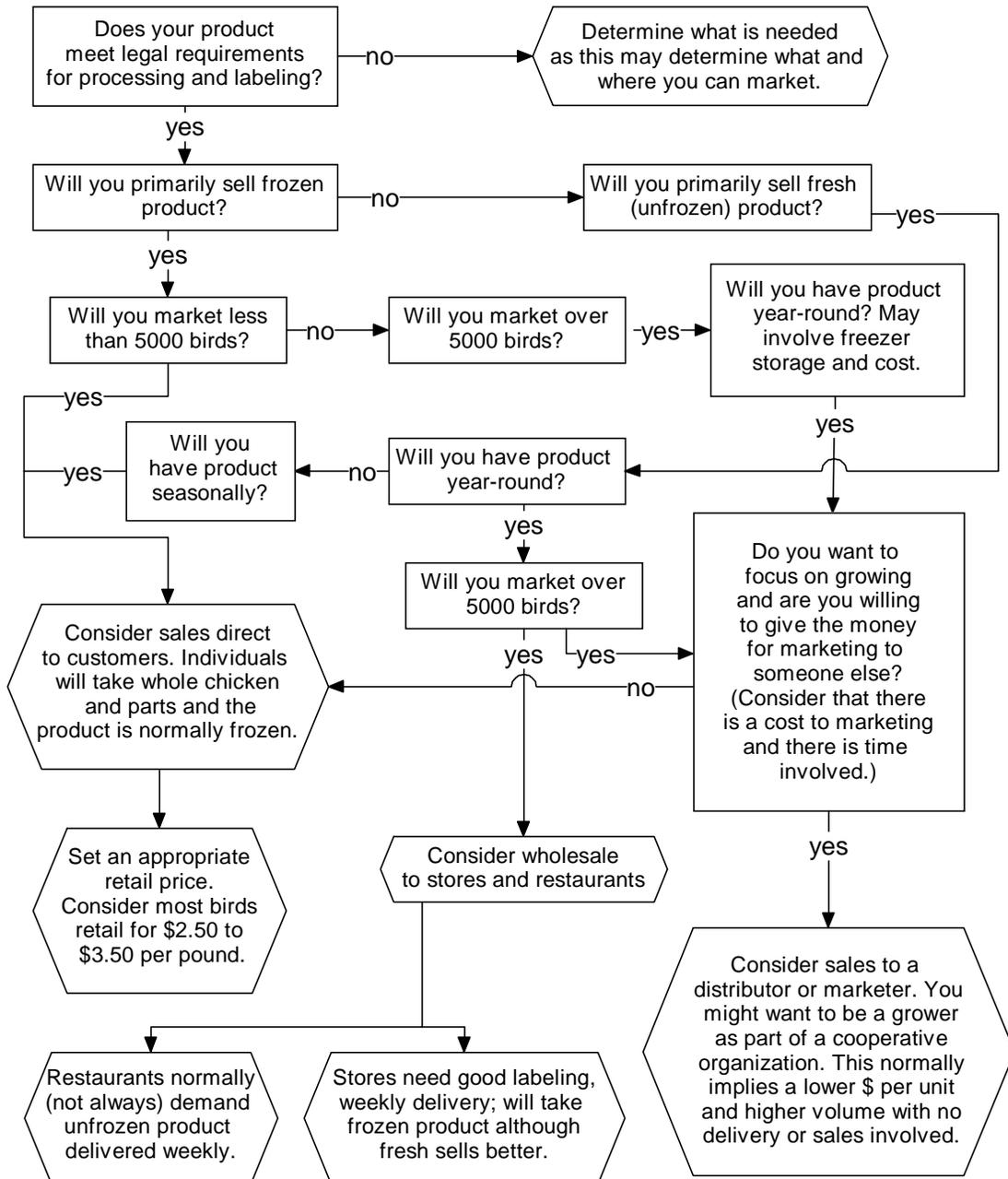


Appendix A (continued)

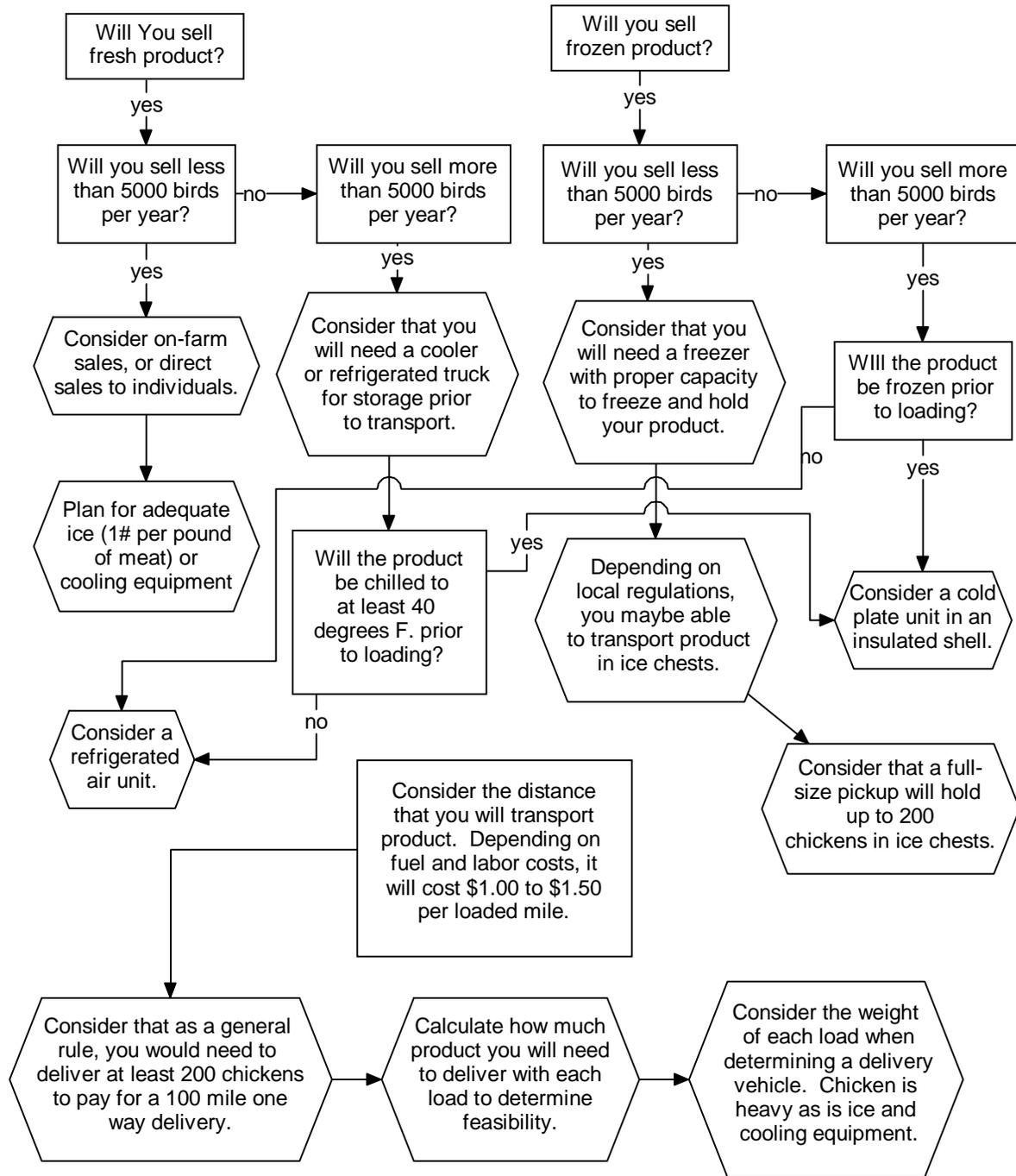
Poultry Decision Tree

Page 5 Marketing

Prepared by Luke Elliott



Appendix A (continued)
Poultry Decision Tree
Page 6 Distribution & Storage
 Prepared by Luke Elliott



Appendix B						
Pasture Pen Budget: "Pastured poultry" pen production with on-farm processing						
Enterprise Budget						Your Estimate
Income						
			# of birds	lbs. per bird	\$/lb.	
	Sell 999 birds	\$8,991.00	1	0	0	0
Expenses						
Fixed:						
1	Brooder House	\$320.00				0
2	Processing Building	320.00				0
3	Processing Equipment	157.86				0
4	Pens	160.00				0
5	Composter	50.00				0
6	Brooder waterer/feeder	10.00				0
7	Brooder	17.86				0
8	Dolly (to move pens)	20.00				0
	Total Fixed Expenses	1,055.72				0
Variable:						
9	Chicks	684.00				0
10	Bags and Staples	79.92				0
11	Wood chips	150.00				0
12	Utilities	20.00				0
13	Feed	2,520.00				0
14	Marketing	400.00				0
15	Labor (production)	1,584.00				0
16	Labor (processing)	1,152.00				0
17	Liability insurance (rider on Farm Policy)	250.00				0
18	Pasture rent per acre	30.00				0
19	Miscellaneous	400.00				0
	Total Variable Expenses	\$7,269.92				0
	Total Expenses	\$8,325.64				0
	Net Income	\$665.36				0
20	Cost per bird (Breakeven)	999	\$8.33			0
21	Net Income per Bird	999	\$0.67			0

Budgets

The financial projections used in these documents, and the assumptions on which they are based, should be used only as guidelines and estimates. In each budget example, the business is operating at full production capacity. Most businesses require up to five years to achieve profitability and good market exposure. It is vitally important that each potential business develop its own set of financial statements before starting an enterprise. The economic and business environment varies tremendously from region to region, and what works in one area may not work in another. Extension specialists, bankers, and accountants can all help in developing the necessary financial statements. Remember, the sustainability of any enterprise is based on its ability to produce and sell a product consistently at a profit.

Pasture Pen Budget Detail — Appendix B (continued)

Basic assumptions:

Seasonal production (only in spring, summer, and fall)

4 batches per year

Each batch is 300 birds in 4 pens (10' x 12')

Birds placed each year: 1200

Grow out period: 8 weeks

Birds eat 15 lbs. of feed each

Feed costs \$280 per ton

No bulk feed storage

10% death loss

Crew of 4 workers to process chickens

7.5% processing loss (7% kept for home consumption)

Dressed weight of 4.5 pounds per bird, without giblets

Price is \$2.00/pound

Birds for sale each year: 999

Birds are direct marketed to customers; no labels

Offal and feathers are composted in a covered, 3-bin system

Labor is based on pens and servicing them but also includes pen construction, brooding, feed-mixing, etc). Pens are not moved daily at first. Only family labor (no hired), valued at \$6.00/hour

All assets fully depreciated over life span with no residual value

Appendix B (continued)

Detail:

- Line 1- Brooder house: $\$5000 - 2\% \text{ salvage value} = \$4900/20 \text{ year life} = \245 per year
Interest = $\$5000/2 \times 3\% = \75 per year
Depreciation + interest = $\$320 \text{ per year}$
- Line 2- Processing building: $\$5000 - 2\% \text{ salvage value} = \$4900/20 \text{ year life} = \245 per year
Interest = $\$5000/2 \times 3\% = \75 per year
Depreciation + interest = $\$320 \text{ per year}$
- Line 3- Processing equipment: $\$1000/7\text{-year life} = \142.86
Interest = $\$1000/2 \times 3\% = \15
Depreciation + interest = $\$157.86$
- Line 4- Pens: $\$200 \text{ per pen, } 5\text{-year life, } 4 \text{ pens; } \$200/5 = \$40.00 \text{ per year}$
- Line 5- Composter: $\$500, \text{ includes labor and materials, } 10\text{-year life; } \$500/10 = \$50.00 \text{ per year}$
- Line 6- Brooder waterer/feeder: $\$20, 2 \text{ year life; } \$20/2 = \$10 \text{ per year}$
- Line 7- Brooder: $\$125 \text{ for gas brooder, } 7 \text{ year life; } \$125/7 = \$17.86 \text{ per year}$
- Line 8- Dolly to move pens; $\$20$
- Line 9- Chicks: $\$0.57 \text{ each, } 1200 \text{ chicks; } \$0.57 \times 1200 = \$684$
- Line 10- Bags and staples: $\$0.08/\text{bird, } 999 \text{ saleable birds} \times \$0.08 = \$79.92$
- Line 11- Wood chips (for brooder and composter): $\$150 \text{ per year}$
- Line 12- Utilities (estimated cost): $\$20 \text{ per year}$
- Line 13- Feed: $\$280 \text{ per ton, } 1200 \text{ birds} \times 15 \text{ lb. each}/2000 \text{ lbs} \times \$280 \text{ per ton} = \$2520.00$
- Line 14- Marketing (printing, postage, advertising, phone, travel, fees, etc.) = $\$400 \text{ per year}$
- Line 15- Production labor: $0.5 \text{ hour per pen} \times 4 \text{ pens} \times 33 \text{ moves per batch} \times 4 \text{ batches/year} \times \$6 \text{ per hour} = \$1584 \text{ per year}$
- Line 16- Processing labor: $12 \text{ hours} \times 4 \text{ people} \times 4 \text{ batches/year} \times \$6.00/\text{hour} = \$1152 \text{ per year}$
- Line 17- Liability insurance: $\$500,000 \text{ coverage} = \$250/\text{year}$
- Line 18- Pasture rent for one acre: $\$30$
- Line 19- Miscellaneous (cleaning supplies, LP, repairs, ice): $\$400 \text{ per year}$
- Line 20- Cost per bird (breakeven) = $\$8.33$
- Line 21- Net income per bird = $\$0.67$

Appendix C

Net-Range Budget: "Day-range" production with custom processing

Enterprise Budget							Your estimate
Income			# of birds	lbs. per bird	\$/lb.		
	sell 5292 birds	53361.00	1	0	0	0.00	
Expenses							
Fixed Cost:		\$/year					
1	Houses	\$213.33				0.00	
2	Composter	50.00				0.00	
3	Brooder waterer/feeder	10.00				0.00	
4	Brooder	77.86				0.00	
5	Bulk Feed Storage	92.86				0.00	
6	Fencing	136.00				0.00	
7	Fence Charger	18.75				0.00	
8	Battery	32.50				0.00	
	Total Fixed Expenses	631.30				0.00	
Variable Expenses:							
9	Chicks	3,420.00				0.00	
10	Wood chips	1,152.00				0.00	
11	Utilities	432.00				0.00	
12	Feed	12,600.00				0.00	
13	Marketing	400.00				0.00	
14	Transportation	384.00				0.00	
15	Labor (production)	4,032.00				0.00	
16	Cleanout cost						
a	Tractor/loader rental	60.00				0.00	
b	Manure Spreader	55.44				0.00	
17	Custom Processing	16,200.00				0.00	
18	Liability Insurance	500.00				0.00	
19	Transportation crate rental	810.00				0.00	
20	Miscellaneous	400.00				0.00	
	Total Variable	\$40,445.44				0.00	
	Total Expenses	41,076.74				0.00	
	Net Income	\$12,284.26				0.00	
21	Cost per bird (Breakeven)	5292	\$7.76			0.00	
22	Net Income per bird	5292	\$2.32			0.00	

Net-Range Budget Detail — Appendix C (continued)

Basic assumptions:

Seasonal production

6 batches per year

Each batch is 1000 birds in 4 houses (12' x 21')

Cost of house includes labor for construction

Birds placed each year: 6000

Grow-out period: 8 weeks

Fence charger will work with up to 8 houses

House is moved after each grow-out

Each brooder heats a 16'x16' zone; 500 chicks are placed in each zone

Litter use in brooder: 2 yards of litter for a 2-inch depth in each zone for each batch

Litter use in house: 3 yards of litter for a 2-inch depth in each house for each batch

Litter costs \$12 per yard (27 cubic feet), bulk, delivered

10% death loss

Birds custom-processed

Birds eat 15 lbs. of feed each

Feed costs \$280 per ton delivered

Transport crates are rented by producer from the plant, but producer uses own vehicle

2% processing loss

Dressed weight of 4.5 pounds per bird, without giblets

84% whole birds, 16% of birds cut-up

Price is \$2.00 per pound

Birds for sale each year: 5292

Birds are marketed from the plant; no need for producer to haul dressed birds

Labor is based on houses and servicing them but also includes house construction, brooding, feed-mixing, etc). Only family labor (no hired), valued at \$6.00/hour

All assets fully depreciated over life span with no residual value

Appendix C (continued)

Details:

- Line 1- Houses: \$800 each; 15 year life; $\$800 \times 4 \text{ pens} = \$3200/15 = \$213.33$ per yr.
- Line 2- Composter: \$500, includes materials and labor; 10 year life; $\$500/10 = \50 per year
- Line 3- Brooder waterer/feeder: \$20, 2-year life; $\$20/2 = \10 per year
- Line 4- Brooder: \$545 for gas brooder, 7-year life; $\$545/7 = \77.86 per year
\$280 = 2 brooders at \$140 each
\$ 40 = thermostat
\$225 = control box to supply electricity
\$545 = Total
- Line 5- Bulk Feed Storage, used 6-ton storage bin: \$650 (*see detail below), 7-year life;
 $\$650/7 = \92.86
*\$150 storage bin
\$200 auger
\$125 motor
\$ 75 relocation
\$100 assembly and new concrete pad
\$650 = Total
- Line 6- Net fencing, 165 feet: 4 rolls, \$170 each, 5 year life; $(\$170 \times 4)/5 \text{ yr. life} = \136 per year
- Line 7- Fence charger: \$150, 8 yr. Life; $\$150/8 \text{ yr.} = \18.75 per year
- Line 8- Battery: \$64, 2 yr. life; $\$64/2 \text{ yr.} = \32.50 per yr.
- Line 9- Chicks: \$0.57 each, 6000 chicks; $0.57 \times 6000 = \$3420$
- Line 10- Wood chips for litter in brooder and houses = \$1152 per year. No additional chips for composter.
- Line 11- Utilities (estimated cost): \$432 per year; 6000 birds – $(6000 \times 0.10) \times \$0.08/\text{bird propane}$
- Line 12- Feed: \$280 per ton; $(6000 \text{ birds} \times 15 \text{ lb. each})/2000 \text{ lbs.} \times \$280 = \$12,600$ per year
- Line 13- Marketing (printing, postage, advertising, phone, travel, fees, etc.) = \$400 per year
- Line 14- Transportation for marketing, processing: 100 miles per batch x 6 batches x 2 trips x \$0.32 per mile = \$384/year
- Line 15- Production labor: 0.5 hours per house x 4 houses x 7 days/week x 8 weeks/batch x 6 batches/year x \$6.00 per hour = \$4032 per year
- Line 16- Cleanout (rental of tractor/loader and manure spreader) = \$115.44
- Line 17- Custom processing: \$3.00 per bird; $5400 \text{ birds} \times \$3.00 = \$16,200$ per yr.
- Line 18- Liability insurance (\$2,000,000) = \$500 per year
- Line 19- Transportation crates: \$3.00/each x 45 crates x 6 batches per year = \$810
- Line 20- Miscellaneous (cleaning supplies, LP, repairs) = \$400 per year
- Line 21- Cost per bird (breakeven) = \$7.76
- Line 22- Net income per bird = \$2.32

Appendix D				
Mobile Processing Unit Budget				
				Your Estimate
	Income			
1	Process 26,481 birds per year		\$66,203	0.00
	Total Gross Income		\$66,203	0.00
	Fixed Expenses			
2	Trailer, modifications, and hitch		5,280.77	0.00
3	Processing Equipment		4,975.90	0.00
4	Insurance		3,500.00	0.00
5	Tags & License		300.00	0.00
	Total Fixed Expenses		\$14,056.6	0.00
	Variable Expenses			
6	Mileage		\$416.00	0.00
7	LP gas		514.80	0.00
8	Labor		18,720.00	0.00
9	Maintenance and Repair on trailer		316.85	0.00
10	Main. And Repair on equipment		256.36	0.00
11	Docking Station rental per batch		49.23	
12	Water		327.60	0.00
13	Electricity		56.16	0.00
	Total Variable Expenses		\$20,657.0	0.00
	Total Fixed + Variable Expenses		\$34,713.6	0.00
14	Breakeven/bird (total processed during year)	26,481	\$1.31	0.00
15	Net Income		\$31,489.3	0
16	Net Income/bird	26,481	\$1.19	0.00

Mobile Processing Unit Budget Detail

Basic Assumptions:

Custom processor charging \$2.50/bird processing fee

Dressed weight of 4.5 lbs. without giblets

Whole birds; no cut-up

Equipment includes basic processing equipment and ice maker

Docking stations have appropriate electrical, water, waste, etc. hook-ups and pad, rental fee required

Appendix D (continued)

Operates ½ year or 26 weeks, 3 days per week, 1 day set-up, 1 day tear-down
Moved between each of three docking stations each week
Processing capacity 350 birds/day, 3 batches/week, 26 weeks/year
Total production: 27,300 birds per year
Labor estimate includes time for set-up and take-down
Crew of 4, one being trained as a facility manager
Only family labor (no hired), valued at \$6.00/hour
Offal and feathers removed by producers
3% processing loss

Details:

- Line 1 - Income 26,481 birds per year x \$2.50 processing charge = \$66,203
Line 2- Trailer, modifications, hitch: \$42,246; $(42,246 - 10\% \text{ salvage value})/15\text{-year}$
life = \$2,534.76 per year
Interest charge $(42,246/2) \times 8\% = \1689.84 per year
Taxes, storage $42,246 \times 2.5\% = \$1056.17$ per year
Total depreciation, interest, taxes, and storage = \$5280.77 per year
Line 3- Processing equipment: \$23,939; $\$23,939/7 \text{ yr. life} = \$3,419.86$ per year
Interest Charge $(23,939/2 \times 8\%) = \957.56 per year
Taxes, Storage $23,939 \times 2.5\% = \$598.48$ per year
Total depreciation, interest, taxes and storage = \$4975.90 per year
Line 4- Insurance: \$3500 per year
Line 5- Tags and license: \$300 per year
Line 6- Mileage: \$0.32 per mile 50 miles per move x 26 moves per year $(50 \times 26 \times$
 $\$0.32) = \416 per year
Line 7- LP gas for scalding: \$1.10 per gallon; $1.5 \text{ gal./hr.} \times 4 \text{ hrs./batch/day} \times 78 \text{ batches}$
per year x \$1.10 = \$514.80
Line 8- Labor $(10 \text{ hrs./batch} \times 78 \text{ batches/yr.} \times 4 \text{ workers} \times \$6/\text{hr.}) = \$18720/\text{yr.}$
Line 9- Trailer maintenance and repair = \$316.85 per year
Line 10- Equipment maintenance and repair = \$256.36 per year
Line 11- Docking station rental:
4 stations at \$6000 each installed with 10-year life, no salvage value = \$2400
Interest $(24,000/2) \times 10\% = \1200
Taxes $24,000 \times 1\% = \$240$
Total depreciation, interest and taxes divided by 78 batches per year =
 $\$3840/78 = \49.23 per-batch rental cost for docking station
Line 12- Water: $\$1.50/1000 \text{ gallons} (8 \text{ gallons/bird} \times 27,300 \text{ birds/yr.})/1000 \text{ gal.}) \times \$1.50 =$
 $\$327.60/\text{yr.}$
Line 13- Electricity: \$56.16 per year
Line 14- Cost per bird (breakeven) = \$1.31
Line 15 - Net income = \$31,489.33
Line 16- Net income per bird processed = \$1.19

Appendix E					
Small Processing Plant Budget					
					Your Estimate
	Income				
	Process 147,000 birds		\$441,000.00		
	Total Gross Income			\$441,000.00	
	Annual Overhead Cost				
1	Building		\$45,752.87		0.00
2	Equipment		8,964.31		0.00
3	Lagoon System		1,577.69		0.00
4	Insurance		6,149.63		0.00
5	Taxes		10,416.05		0.00
6	Misc.		791.39		
	Total Annual Overhead Cost			\$73,651.94	0.00
	Operating Cost				
7	Labor		\$84,000.00		0.00
8	Payroll service		600.00		
9	Admin./Manager		20,000.00		0.00
10	Packaging		27,000.00		0.00
11	Utilities				
	a	Electric	2,400.00		0.00
	b	Water	1,872.00		0.00
	c	LP gas	1,650.00		0.00
12	Offal Disposal		1,355.00		0.00
13	Repairs and Maintenance		7,500.00		0.00
14	Supplies		2400.00		
15	Misc.		2450.00		0.00
	Total Operating Costs			\$15,1227.00	0.00
	Total Cost (year 1)			\$22,4878.94	0.00
16	Breakeven/bird processed		\$147,000	1.53	0.00
17	Net Income			\$21,6121.06	0.00
18	Net Income/bird			\$1.47	0.00

Small Processing Plant Budget Detail — Appendix E (continued)

Basic Assumptions:

Land purchased: 2 acres

Dressed weight of 4.5 lbs without giblets

84% whole birds; 16% cut-up

Plant operates at full capacity: one 8-hour shift 5 days per week, 50 weeks per year

Processed birds are shipped out every other day. Due to the limited storage capacity of the walk-in cooler, this is necessary for the plant to have enough storage for newly processed birds. Freezer rental will be an additional charge.

Birds are killed for four hours in the morning and processed in the afternoon in batch processing.

Total number slaughtered each day: 150 birds/hour x 4 hours = 600 birds per day, 150,000 birds per year.

Chill tank capacity is 600 birds; walk-in cooler capacity is 1200 birds.

Carcasses are bagged individually.

2% processing loss.

Total saleable birds = 147,000 per year.

Plant is government-licensed.

Offal is picked up daily.

A credit line of at least \$2,500 per year is recommended for unforeseen expenses.

Insurance overhead includes product liability.

Crew of 7, including a facility manager. All labor is hired.

Details:

Income- Charge \$3.00 per bird

Line 1- Building: \$348,000, 15 yr. note, 10% interest (Calculated with amortization schedule formula = \$45,752.87 per year)

Line 2- Equipment: \$43,642, 7 yrs., 10% interest (Calculated with amortization schedule formula = \$8,964.31 per year). See Small Plant Equipment Detail below.

Line 3- Lagoon system: \$12,000, 15 yr. note, 10% interest (Calculated with amortization schedule formula = \$1,577.69 per year)

Line 4- Insurance: 1.5% of the initial investment (4116428×0.015) = \$ 6175.000 per year

Line 5- Tax: 2.5% of the initial investment; 411642×0.025 = \$10291.00 per year

Line 6- Miscellaneous (computer, office furniture, etc.): \$3000, 3 yr. note, 10% interest (Calculated with amortization schedule formula = \$1206.34 per year)

Line 7- Labor: Six employees working 8 hours/day, 5 days per week, 50 weeks per year, \$7 per hour; $6 \times 8 \times 5 \times 50 \times 7$ = \$84000

\$6 = Wages

\$1 = 14% of wages includes payroll taxes (social security, medicare, unemployment, workman's comp, etc.)

\$7 = Total

Line 8 – Payroll service: \$50 per month; 50×12 = \$600 per year

Line 9- Administrative/Facility Manager: \$20,000 per year

Appendix E (continued)

- Line 10- Packaging (shrink bags, staples, labels): \$0.18 per bird (600 birds/day x 5 days/week x 50 weeks/year x \$0.18/bird = \$27,000.00 per year
- Line 11- Utilities costs:
 Electric (for lights, cooler, picker, scalders)- 2,500 kWh/month x .08/hour x 12 months= \$2,400 per year
 Water: (8 gals./bird x 600 birds/day x 5 days/week x 50 weeks/year)/1000 gallons x \$1.50 per 1,000 gallons = \$1,800 year
 LP Gas (to heat water): (4 hours/day x 1.5 gallons per hour x 5 days/week x 50 weeks/year) x \$1.10 gallon = \$1,650 per year
- Line 12- Offal disposal: 1.25 lbs./bird x 150,000/415 lbs (weight of 50-gallon drum) x \$3 per 50-gal drum = \$1355 per year
- Line 13- Repairs and Maintenance = \$7500.00
- Line 14 - Supplies (includes gloves, soap, aprons, hair nets, knives, towels, scrub brushes, buckets, plastic totes, stacking trays for cooler, office supplies) = \$2450 per year
- Line 15- Miscellaneous = \$2400 per year
- Line 16- Cost per bird (Breakeven) = \$1.53
- Line 17- Net Income = \$216,121.06

Small Plant Equipment Detail

Prices based on Pickwick-Zesco as of 3/1/01

Kill and Picking Room

Description	Price Each	No.	Total Price
High Velocity Air Curtain	\$ 745	3	\$2,235
Stunning Knife	1,560	1	1,560
Multiple-Bird Shackle	95	5	475
Killing Cabinet	1,875	1	1,875
Scalder	2,900	1	2,900
Dunkmaster	2,125	1	2,125
Spin-Pik Batch Picker	4,700	1	4,700
Handwash Sink	695	1	695
Hot & Cold Water Mixing Station	480	1	480
		Total	\$17,045

Appendix E (continued)

Eviscerating Room

Description	Price Each	Number	Total Price
Handwash Sink	\$ 695	1	\$ 695
SS Three Compartment Sink	1,179	1	1,179
Eviscerating Table	1,890	1	1,890
Eviscerated Bird Holding Tank	75	24	1,800
Stainless Steel Table	382	1	382
Gizzard Peeler	1,955	1	1,955
Ice Cuber	3,000	1	3,000
Ice Bin Cap	900	1	900
Hot & Cold Water Mixing Station	480	1	480
		Total	\$12,281

Processing Room

Description	Price Each	Number	Total Price
Stainless Steel Table	\$ 382	1	\$ 382
Poultry Cut-up	1,495	1	1,495
Stainless Steel Table	454	1	454
Poultry Vacuum Machine	7,350	1	7,350
Handwash Sink, Floor-Mounted	695	1	695
Hot & Cold Water	480	1	480
Chicken Dolly	199	6	1,194
Chillpac Transport Food Container	35	36	1,260
Storage Tubs Cooler	56	18	1,008
		Total	\$14,318

Note: Air chill equipment may cost more; however, the cost of water will be lower.

Appendix F
Sensitivity Analyses
Profitability of organic table-bird production units of different sizes in the U.K.

	<u>200 birds/wk</u>	<u>500 birds/wk</u>	<u>1000 birds/wk</u>
Annual production	10,000	25,000	50,000
Labor (full-time equivalent)	0.3	0.45	0.6
Building type	mobile	fixed hoop	stationary
Capital invested	\$ 14,063	\$ 17,188	\$140,625
Gross margin	\$ 14,063	\$ 35,156	\$ 70,313
Fixed costs			
Labor	\$ 7,031	\$10,547	\$14,063
Deprec/repairs	\$ 1,875	\$ 3,906	\$ 7,813
Interest @ 8.5%	\$ 1,195	\$ 1,461	\$11,953
Org. cert.	\$ 469	\$ 469	\$ 469
Other (office)	\$ 1,250	\$ 1,563	\$ 1,875
Total	\$ 11,820	\$17,945	\$36,172
Profit	\$ 2,242	\$17,211	\$34,141

Source: Lampkin, Nicolas. 1997. Organic Poultry Production. Aberystwyth, University of Wales, U.K.

Appendix F (continued)

Processing Plant Capacity Utilization

	100%	90%	80%	70%	50%
Production Capacity	150,000	150,000	150,000	150,000	150,000
Average Volume	150,000	135,000	120,000	105,000	75,000
Ownership Costs:	\$73,652	\$73,652	\$73,652	\$73,652	\$73,652
Operating Costs:					
Labor	\$84,000	\$75,600	\$67,800	\$58,800	\$42,000
Payroll Services	600	600	600	600	600
Admin./Manager	20,000	20,000	20,000	20,000	20,000
Packaging	27,000	24,300	21,600	18,900	13,500
Electric	2,400	2,160	1,920	1,680	1,200
Water	1,872	1,620	1,440	1,260	900
LP Gas	1,650	1,485	1,320	1,155	825
Offal Disposal	1,355	1,215	1,080	945	675
Repairs & Maintenance	7,500	7,500	7,500	7,500	7,500
Misc. & Supplies	4,850	4,320	3,840	3,360	2,400
Total Cost	\$224,879	\$212,452	\$200,752	\$187,852	\$163,252
Cost/bird	\$1.50	\$1.57	\$1.67	\$1.79	\$2.18

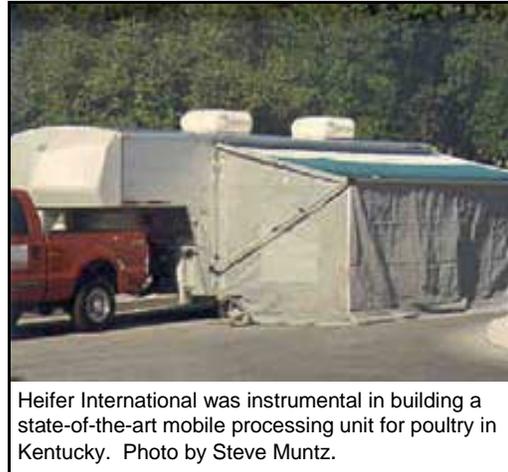
Based on the sensitivity analysis of the capacity utilization on the fixed processing plant shown in Appendix E, costs per bird continues to rise as the number of birds processed falls. The difference between operating at 100% capacity and 80% capacity is \$0.17/bird while the difference between 80% and 50% is \$0.61/bird. This is a reflection of the ownership or fixed expenses associated with a processing facility. It is cheaper to operate closer to full capacity, spreading the fixed costs over more birds processed. All costs are held constant except for the number of birds processed per year and the operating costs affected by the number of birds processed.

Appendix G

Project Summary

Enhancing Feasibility for Range Poultry Expansion

Helping producers and groups establish or expand small pasture-based poultry businesses is an interest of the National Center for Appropriate Technology (NCAT) and its partner Heifer International. “Enhancing Feasibility for Range Poultry Expansion” was a project led by the two nonprofit organizations. During an earlier project helping limited-resource farmers try out small batches of “pastured poultry” as an enterprise, the organizations realized that many of these farmers would like to expand operations and, in particular, need access to slaughter facilities in order to sell inspected meat. Consolidation in the meat processing industry has left few small plants.



When starting or expanding an enterprise, it is important to do feasibility and business planning. To develop *Growing Your Range Poultry Business: An Entrepreneur’s Toolbox*, NCAT and an additional sustainable agriculture partner, the Kerr Center, surveyed small producers to determine their needs. The Toolbox focuses on feasibility issues that look at personal and family considerations, as well as marketing, production, and economic issues. It is especially important to look at the web of meat inspection regulations related to processing. The Toolbox also contains Budgets for enterprises such as a small operation with on-farm processing and direct marketing, as well as a Mobile Processing Unit (MPU), and a small plant. The Toolbox discusses the benefits of working together instead of being a “lone ranger,” especially when establishing a processing plant, and refers to resources for assistance.

The project also examined the use of Mobile Processing Units (MPUs). MPUs are a development tool to help producer groups develop a consistent product, build a market, and build capacity. Producers can start with small flocks, ironing out production issues with a low investment of resources. MPUs reduce individual risk since the unit is shared by a group of producers. Once a market and capacity are built, a small regional processing plant can be established.

In Kentucky, Heifer worked with a collaborative group, including the Kentucky Department of Agriculture and Partners for Family Farms, to build an MPU. In Kentucky, no poultry can be sold unless it is slaughtered in a licensed facility. The KY MPU is a federally exempt facility that is licensed by Kentucky’s Cabinet for Health Services. It is an enclosed gooseneck trailer, with equipment mounted inside. It cost about \$70,000 to build. It must be used at approved docking stations that include a level place to park the unit, a

Appendix G (continued)

concrete pad, and appropriate electrical, water, and waste hookups. A canopy extends out and is screened in to make an outdoor kill area. Facility managers must be trained to use the unit. It has a rental fee and user agreement. The plant has Standard Sanitation Operating Procedures (SSOPs) and an HACCP plan. The unit takes a lot of work to set up and tear down but is an excellent example of how MPUs can operate. The Kentucky MPU not only provides a good option to small KY poultry producers, but serves as a model for other groups exploring MPUs.

Heifer examined the use of MPUs in two other states. As of 2002, Mississippi state meat inspection authorities did not permit an MPU to operate under exemptions. Heifer brought players to the table—inspection authorities, legislators, and farmers—to discuss the impact of meat inspection regulations on small poultry producers. The interpretation of the federal exemptions in Alabama were similarly limiting for small producers. Heifer identified a federally licensed plant that might consider custom processing and organized



Careful planning is important when expanding range poultry operations. Photo by Karen Machetta.

the farmers interested in supplying it with birds, along with the trailer and crates needed for hauling them.

Additional reports from the project include *Poultry Processing Facilities Available for Use by Independent Producers in the Southern Region*, *Legal Issues for Small Poultry Processors*, and reports on nutritional resources and stock. These publications are available on the website of the American Pastured Poultry Producers Association (www.apppa.org) or ATTRA can provide hard copies free of charge.

In the future, NCAT, Heifer, and the Kerr Center can provide training to farmers, educators, and other agricultural professionals interested in pasture-based poultry enterprises.

- Heifer International is a nonprofit organization dedicated to the alleviation of hunger and poverty through community development and sustainable livestock production. The headquarters is in Little Rock, AR.
- The National Center for Appropriate Technology is a nonprofit organization with offices in Butte, MT, Fayetteville, AR, and Davis, CA, that has programs in sustainable agriculture, energy, and communities. NCAT promotes the economic well-being and quality of life of urban and rural residents while working to conserve America's natural resources.
- The Kerr Center for Sustainable Agriculture is a nonprofit education foundation in Poteau, OK, with a mission to encourage sustainable agriculture.

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