

# Oregon Food Infrastructure Gap Analysis

**Where Could Investment Catalyze Regional  
Food System Growth and Development?**

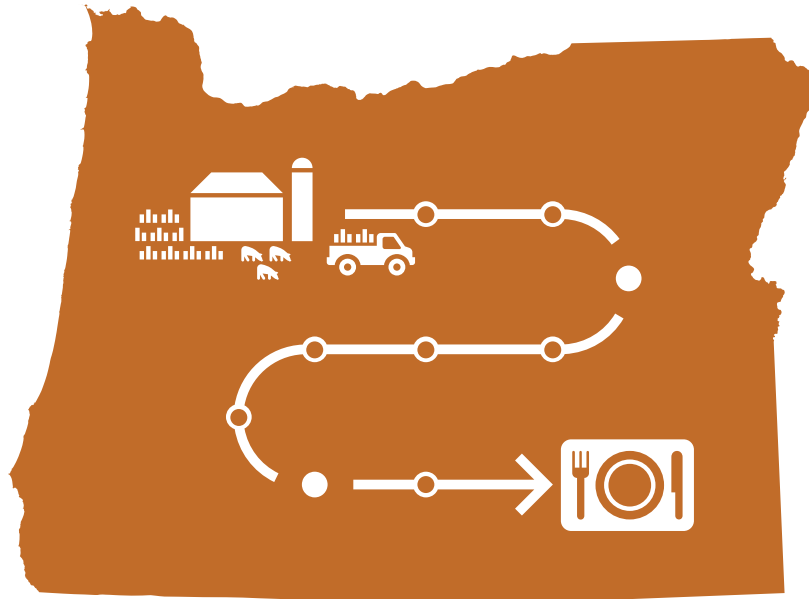
**This research was made possible through a generous grant from Meyer Memorial Trust. We at Ecotrust appreciate the ongoing support and partnership of an organization so thoughtfully pursuing reliable prosperity for all Oregonians.**



Meyer Memorial Trust's mission is to work with and invest in organizations, communities, ideas, and efforts that contribute to a flourishing and equitable Oregon by using a mix of strategic, proactive, and responsive investments, including grantmaking, loans, initiatives, commissioning research, supporting policy advocacy, and a range of community and nonprofit engagement strategies.



For more than twenty years, Ecotrust has converted \$80 million in grants into more than \$800 million in assets for local people, businesses, and organizations from Alaska to California. Ecotrust's many innovations include cofounding an environmental bank, starting the world's first ecosystem investment fund, creating programs in fisheries, forestry, food, farms, and social finance, and developing new tools to improve social, economic, and environmental decision-making. Ecotrust honors and supports the wisdom of Native and First Nation leadership in its work. Learn more at [www.ecotrust.org](http://www.ecotrust.org)



# Oregon Food Infrastructure Gap Analysis

**Where Could Investment Catalyze Regional  
Food System Growth and Development?**

By Ecotrust, with Matthew Buck  
Funded by Meyer Memorial Trust

April 2015

## Project Team

Amanda Osborne, VP, Food & Farms, Ecotrust  
Matthew Buck, Matthew Buck Consulting  
Lauren Gwin, PhD, Associate Director, Center for Small Farms & Community Food Systems at Oregon State University  
Michael Mertens, PhD, Director, Knowledge Systems, Ecotrust  
Stacey Sobell, Director, Food & Farms, Ecotrust  
Katy Pelissier, Program Coordinator, Food & Farms, Ecotrust  
Angela Hedstrom, Farm to School Assistant, Ecotrust  
Jocelyn Tutak, GIS Analyst, Ecotrust  
Noah Enelow, PhD, Economist, Ecotrust  
William Moore, Senior Developer, Ecotrust  
Ryan Sullivan, Graphic Design, Paste in Place

## Stakeholders and Contributors

Hannah Ancel, ACCESS  
Susan Arakelian, Beaverton School District  
Mark Anderson, Champoeg Farm  
John Boyle, New Seasons Market  
Denise Breyley, Whole Foods Market  
Sarah Brown, Oregon Tilth  
Caitlin Burke, Hacienda CDC  
Sarah Cantril, El Huerto del Familia  
Cory Carman, Carman Ranch  
Karla Chambers, Stahlbush Island Farms  
Bridget Cooke, Adelante Mujeres  
Eecole Copen, Oregon Health Sciences University  
Mitch Daugherty, Built Oregon  
Fernando Divina, Oregon Health Sciences University  
Piper Davis, Grand Central Baking  
Chuck Eggert, Pacific Foods  
Lynne Fessenden, Willamette Farm & Food Coalition  
Joel Fisher, Oregon Business Association  
Gitta Grether-Sweeney, Portland Public Schools  
Amy Gilroy, Oregon Department of Agriculture  
Rick Gruen, Clackamas County  
Greg Higgins, Higgins Restaurant  
Alan Hummel, New Seasons Market  
Franklin Jones, B-Line Sustainable Urban Delivery  
Reg Keddie, Pacific Foods  
Jill Kuehler, formerly Friends of Zenger Farm  
Spencer Masterson, Oregon Food Bank  
Michael Madigan, Bowery Bagels  
Chrissie Manion Zaerpoor, Kookoolan Farms

## Advisors

Jeff Harvey, CEO, Burgerville  
Ashley Henry, Community Engagement Manager, Beneficial State Foundation  
Sayer Jones, Director of Finance and Mission Related Investing, Meyer Memorial Trust  
Nathan Kadish, Director of Investment Strategy, Ecotrust  
John Klostermann, Director of Operations, Oregon Food Bank  
Jason Lafferty, General Manager, SnoTemp  
David McGivern, President, Northwest Food Processors Association  
Mike Moran, General Manager, Columbia Plateau Producers (Shepherd's Grain)  
Katie Pearmine, Strategic Sourcing Manager, Oregon Food Bank  
Gary Roth, Marketing Director, Oregon Department of Agriculture  
Richard Satnick, Owner, Dick's Kitchen

Laura Masterson, 47th Avenue Farm  
Sarah Masoni, Food Innovation Center, Oregon State University  
Nellie McAdams, Friends of Family Farmers  
Michelle McGrath, Oregon Environmental Council  
Gretchen Miller, Oregon Food Bank  
Sara Miller, Northeast Economic Development District  
Michael Morrissey, Food Innovation Center, Oregon State University  
Jim Myers, PhD, Oregon State University  
Ivan Mulaski, Friends of Family Farmers  
Tanya Murray, Oregon Tilth  
Ron Paul, James Beard Public Market  
Peter Platt, Andina  
Madeleine Pullman, PhD, Portland State University  
Jared Pruch, Cascade Pacific RC&D  
Teresa Retzlaff, North Coast Food Web  
Trudy Tolliver, Portland Farmers' Market  
Chris Schreiner, Oregon Tilth  
Lane Selman, Culinary Breeding Network  
Wendy Siporen, Thrive  
Emma Sirois, Healthcare Without Harm  
Thomas Stratton, formerly Oregon Rural Action  
Sarah Sullivan, Gorge Grown Food Network  
Sharon Thornberry, Oregon Food Bank  
Chris Tjersland, New Seasons Market  
Katrina Van Dis, Central Oregon Intergovernmental Council  
Lisa Vincent, Beaverton School District  
Karen Wagner, formerly Oregon Rural Action  
Bob Wise, Cogan Owens Greene  
Philip Yates, ACCESS

8

Pork





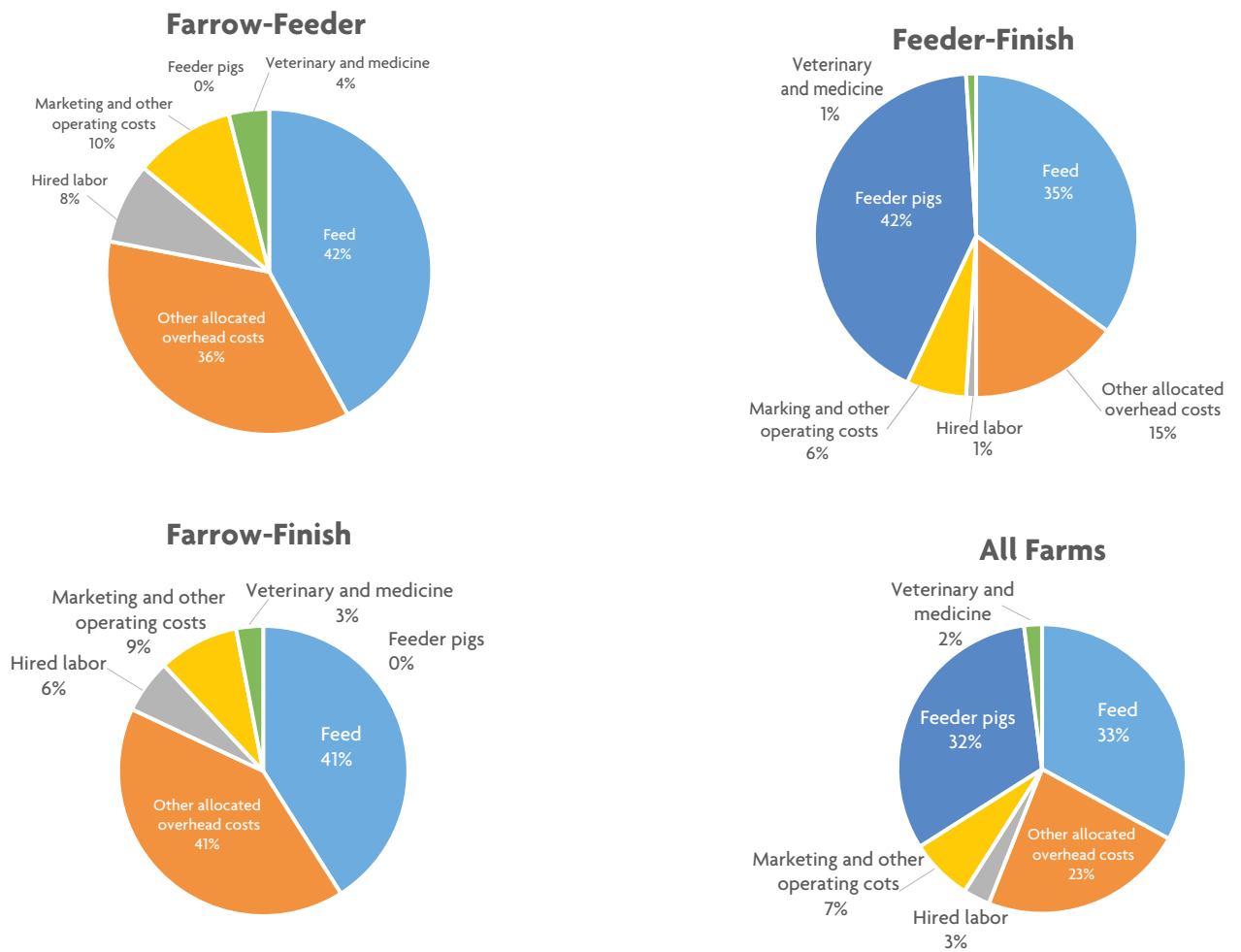
## 8.2. Segmentation, Key Issues, and Trends

There five basic production systems for hogs/pigs:

- Farrow to Finish: all stages from breeding through sale of a finished animal, approximately 240 to 270 pounds
- Farrow to Wean: breeding through sale of ten-to-fifteen-pound piglets
- Farrow to Nursery: breeding through sale of forty-to-sixty-pound “feeder” pigs
- Wean to Finish: purchase and feeding of ten-to-fifteen-pound piglets
- Finishing: purchase and feeding of forty-to-sixty-pound “feeder” pigs

Costs of production vary for the different production systems as seen in the graphic on the below.

**Figure 8.2: Cost of pork production systems.**



Common breeds of hogs raised include Yorkshire, Duroc, Hampshire, and Berkshire.

Most pigs end up sold directly to packers and delivered live to a buying station or processing plant. More than 95 percent are sold under a “carcass merit” system with pricing affected by ratios of fat to muscle. However, from a retail perspective, there is no corresponding grading system to alert customers to product differences (as with “select” or “choice” for beef).

Methods of production include:

- **Confinement:** Barns with areas to segregate pigs of different sexes and ages. Intensive production with large numbers of animals (eight hundred-plus). All feeds are provided. Often with easier-to-clean and disinfect hard surface flooring, sloped to facilitate collection and storage of liquid manure. Associated with use of “gestation crates” and “farrowing crates,” which limit the movement of breeding and nursing sows. Very capital intensive to build or retrofit.
- **Hoop Houses:** Lower-cost structures with a frame and cover, open at one or both ends. Cement or earthen floors with straw or other bedding materials on top. All feeds are provided. Appropriate for one hundred to two hundred animals, which live in social groups. Requires more oversight to identify and segregate sick or injured animals. Requires more labor and expense to periodically remove used bedding and solid manure, and provide and spread fresh bedding.
- **Pasture:** Low- or no-structure costs. May be seasonal production. Pigs live outdoors with access to shade or shelter where appropriate, usually as part of a crop/livestock rotation system. Forage can meet a percentage of pigs’ diet, but supplemental feeds must still be provided. Appropriate for smaller groups of animals. Hogs can engage in natural behaviors, but must be dispersed over a larger area to avoid concentrated environmental damage (from rooting and digging, etc.) and allow safe absorption of nutrients from manure. Some risk of exposure to disease/pathogens.

Consumer interest in alternatives to “conventional pork” has been stoked by:

- Concerns for food safety:
  - ✦ Routine use of antibiotics. (Use of hormones is prohibited under federal law for hogs.)
  - ✦ Consumer Reports studies found yersinia enterocolitica in 69 percent of tested pork samples, and additional incidences of salmonella, staphylococcus aureus, and listeria. More troubling is the fact that the majority of samples contained bacteria that were resistant to one or more antibiotics.





- Concerns for animal welfare with related advocacy by animal welfare organizations:
  - + Discomfort with crowded conditions on very large “factory farms.”
  - + Discomfort with sows being immobilized for months in gestation or farrowing crates.
  - + Routine manipulation of animals, including castration, tail docking, and teeth clipping.
  - + Well-publicized videos showing mistreatment of animals.
- Concern for the environment:
  - + Discomfort with the manure lagoons associated with large hog operations, each of which can hold 400,000 gallons of liquid manure. These are a source of odors and have contaminated ground and surface water, leading to algae blooms and fish kills.
- Interest in unique, high-quality, local foods and a desire to support local farm economies.

Farmers’ desire to limit piglet mortality, a major source of loss, led to use of farrowing crates in confinement systems, which limit mobility in order to prevent the sow from accidentally crushing piglets against hard surfaces. However, deep, soft bedding has also been shown effective in reducing mortality.

In response to expressed consumer concern and initiatives passed in California and other states, since 2012 more than sixty of the world’s largest food brands,<sup>142</sup> including McDonald’s, Burger King, and Costco, have announced commitments to eliminate crates from their supply chains.

Alternatives to conventional pork discussed in this report include:

- Natural
- Organic
- Pasture Raised
- High animal welfare (Animal Welfare Approved, Certified Humane, Food Alliance, etc.)
- Local products from small and mid-sized farms offering one or more of the above attributes

### **8.2.1. Natural**

As a marketing term, “natural” actually says very little about pork. The USDA has three requirements for use of “natural,” which for pork all relate to handling of meat after the animal has been slaughtered—not to conditions under which the animal was raised:

- The product must be minimally processed
- It cannot contain any artificial ingredients
- It cannot contain any preservatives

<sup>142</sup> “Your Pig Almost Certainly Came from a Factory Farm, No Matter What Anyone Tells You,” Matthew Prescott, *Washington Post*, 2014.



Most conventionally produced fresh pork meets these minimum requirements if it has not been packed with a marinade, tenderizer, or other ingredients. However, companies marketing branded pork (Niman Ranch, Applegate, etc.) typically have their own additional, internal program requirements. These can include:

- No antibiotics (“not ever”—with animals treated for health reasons sold conventionally)
- No feed containing animal protein or fat (often with allowances for milk)

These companies may also make humane animal handling claims, though criteria for those claims may not be public or may not be clear. Verification of requirements and claims also often happens internally, without the involvement of an independent auditor, and sometimes only with submission of affidavits.

### 8.2.2. Organic

“Organic” is regulated by the USDA and requires a third-party audit. USDA certified organic pork must come from cattle raised in compliance with the standards from the last third of gestation to slaughter.

- Feeds must be certified organic. Vitamin and mineral supplements must be approved.
- Forage must be grown without the use of synthetic fertilizers, herbicides, or pesticides.
- Genetically modified (GMO) feedstock and forage are prohibited.
- Hogs must have access to the outdoors, to appropriate shelter, and to clean dry bedding.
- Use of antibiotics is prohibited.
- Animals must also be slaughtered/processed under USDA or state equivalent certification.

There are currently very few certified organic hog producers. (In fact, a search using the Oregon Tilth directory for organic hog or pork producers returned no results in Oregon.) However, several smaller-scale hog farmers in Oregon do make “raised with organic practices” claims, while stating they are not organic certified. Reasons given for not seeking organic certification include the high cost of organic feeds and the added expense and administrative burden of going through the certification process.

However, a 2012 study at the University of Illinois<sup>143</sup> suggests:

“there is a difference in prices based on the production of specialized pork products, i.e., certified organic pork. Those producers received \$19.70 more per cwt. for market hogs than other producers. The regression

<sup>143</sup> “Determinants of Profitability in Niche Swine Production,” Dwight Sanders, Ira Altman, Gary Appgar, *Journal of the ASFMR*, 2012.

analysis shows that this same marketing association resulted in \$13.47/cwt. increase in net margins for those producers. So, while producers are price-takers over time, they may be able to shift up their average price and increase profit margins by further specializing their production. Granted, meeting the more rigorous specifications and qualifications for “certified organic” pork is undoubtedly more costly; but, this analysis shows that producers who successfully meet those niche requirements are rewarded with higher net profits.”

### 8.2.3. Pasture-Raised

Information on pasture-raised as a segment of the pork industry is difficult to collect. According to a 2014 *New York Times* article, “Neither the United States Department of Agriculture nor the National Pork Producers Council has data on the number of pastured pigs, though in 2006, research done at Iowa State University estimated that the drift, as a group of pigs is known, numbered from 500,000 to 750,000.”<sup>144</sup>

One source suggests that rotating hogs through production and wooded areas on a diversified farm operation to maximize forage opportunities can reduce purchased feed costs by as much as 50 percent.<sup>145</sup>

Founder Paul Willis is quoted in the *New York Times* article claiming Niman Ranch produces as many as half of all pastured pigs, and saying “We could sell 20 percent more than what we have in no time. This way of raising pigs is still a very small part of the business—400,000 hogs are killed each day and we can supply only 3,000 pigs a week.” Niman Ranch customers include Chipotle restaurants and others.

However, the article also documents the difficulty smaller pasture-pork brands face trying to access markets, manage inventory, and deal with conditions of over- and under- supply while growing a business.

### 8.2.4. High Animal Welfare

There are a number of animal welfare claims paired with natural, organic, or pasture-raised pork claims. Food Alliance has, for example, certified Pure Country Pork (in Ephrata, Washington), and a number of other pork suppliers to the New Seasons Market grocery store chain.

### 8.2.5. Local Branded

The “local” segment of the market is represented by independent farmers marketing to consumers or to commercial food buyers (retail, restaurants, food service). There are a few independent producer brands in the Northwest (such as Pure Country Pork in Washington or Snake River Farms in Idaho), which have been successful accessing regional and even national markets. There do not appear to be any smaller regional pork brands involving multiple producer/

<sup>144</sup> “Demand Grows for Hogs That Are Raised Humanely Outdoors,” Stephen Strom, *New York Times*, 2014.

<sup>145</sup> Insights on Beginning a Pastured Pork Operation,” Agrowingculture, (n.d.).



owners. Carlton Farms (discussed in more detail below), which operates its own processing facility, dominates the local/regional market, with hogs reportedly sourced from Oregon, Washington, Idaho, and Canada.

### 8.2.6. Growth in Markets for Alternative Pork

Price differences for conventional and alternative pork observed in Portland December 2014 include:

	Loin Chops	Italian Sausage	Ham	Bacon
<b>Major Grocer</b> Generic or Store Brand	\$5.99/lb. Boneless	\$4.49/lb.	\$1.89/lb.	\$5.99/lb.
<b>New Seasons Market</b> Northwest Grown	\$7.49/lb. Boneless	\$5.49/lb.	\$4.99/lb.	\$7.99/lb.
<b>Farm Direct—Heritage Farms Northwest</b> OR, Pastured, Red Wattle Breed	\$10.00/lb. Boneless	\$9.50/lb.	\$9.50/lb.	\$10.50/lb.
<b>Tails &amp; Trotters Retail Store</b> Northwest Grown, Hazelnut Finished	\$10.00/lb. Bone-in	\$10.00/lb.	\$16.00	\$12.50/lb.

**Table 8.1: Price differences for conventional and alternative pork observed in Portland, December 2014.**

As with other products studied in this report, despite the potential to realize higher prices overall for differentiated products, midsized and smaller scale farmers pursuing niche markets must earn a margin that enables profitability in spite of typically higher per unit production, processing, and marketing costs.

### 8.3. Demand for Pork in Oregon

Understanding market demand is critical to evaluating potential investments to increase production and profitability of local and alternative pork.

### 8.4. Consumer Spending on Pork

According to the Bureau of Labor Statistics, the average household (2.6 persons) in the western US spent \$7,180 in 2013 on food at home (59 percent) and away (41 percent) in 2013.<sup>146</sup> This includes \$163 spent on pork for at-home consumption. As noted above, US per capita consumption of pork is about forty-six pounds.

According to a 2005 report by the Economic Research Service, 38 percent of pork consumed domestically is fresh. The remaining 62 percent of consumption is of processed products, which industry figures divide roughly into ham (39 percent), sausage (25 percent), bacon (23 percent), or other “lunchmeats” (13 percent).<sup>147</sup>

<sup>146</sup> “Region of residence: Annual expenditure means, shares, standard errors, and coefficient of variation,” Consumer Expenditure Survey, 2013.

<sup>147</sup> “Factors Affecting U.S. Pork Consumption,” Christopher Davis and Biing-Hwan Lin, USDA, ERS, 2005.



Pork is primarily purchased at retail stores (78 percent). Approximately 82 percent of fresh pork and 76 percent of processed pork is consumed at home.<sup>148</sup>

Restaurants reportedly account for another 15 percent of fresh pork and 18 percent of processed pork. The remaining balances of 3 percent of fresh pork and 6 percent of processed pork are consumed through other foodservice venues.

In November 2013, the USDA Economic Research Service listed the value of pork at the farm level at \$1.10, wholesale at \$1.70, and retail at \$4.06. This implies wholesale could average 42 percent of retail price.<sup>149</sup>

A number of sources indicate foodservice ingredient costs average 30 percent of the final price, but can range lower or much higher depending on the type of establishment. Schools and hospitals may be seeking to keep food costs closer to 20 percent. Fine dining establishments may be comfortable with food costs reaching 40 percent or more with a priority placed on high-quality ingredients.

Using population data and the figures above, it is possible to form estimates of the consumer market for pork in Oregon, at the county level or for municipalities. The estimates are separate for fresh and processed products, and represent averages for all pork products in each category.

According to ERS figures, the average price per pound paid for pork at retail in October 2014 was \$3.10 for nonspecific pork products, \$4.17 to \$4.60 for fresh chops of various types, \$4.60 for boneless ham, and \$5.80 for bacon.<sup>150</sup>

However, given that producers developing branded pork programs to target local and regional markets will have to find markets for all cuts, the averages are worth considering.

**Table 8.2: Estimated demand for pork.**

Geographic Unit	Total Pork “Consumed”	Fresh Pork (38%)	Processed Pork (62%)
Oregon (pop. 3,919,020)	180M lbs.	68.4M lbs.	111.6M lbs.
Multnomah Co. (pop. 756,530)	34.8M lbs.	13.2M lbs.	21.6M lbs.
Jackson Co. (pop. 206,310)	9.5M lbs.	3.6M lbs.	5.9M lbs.
City of Bend (pop. 79,109)	3.6M lbs.	1.4M lbs.	2.2M lbs.
City of La Grande (pop. 13,048)	600K lbs.	228K lbs.	372K lbs.

Breakdowns for fresh and processed pork through retail and foodservice, and estimates for associated wholesale opportunities follow.

<sup>148</sup> “Factors Affecting U.S. Pork Consumption,” Christopher Davis and Biing-Hwan Lin, USDA, ERS, 2005.

<sup>149</sup> “Overview: Meat Price Spreads,” USDA, ERS, 2015.

<sup>150</sup> “Overview: Meat Price Spreads,” USDA, ERS, 2015.



Geographic Unit	Total Fresh Pork	Fresh Pork: Retail (82%)	Fresh Pork at Home	Implied Wholesale (42%)	Fresh Pork: Foodservice (18%)	Implied Wholesale (\$1.70 avg.)
Oregon (pop. 3,919,020)	68.4M lbs.	56M lbs.	\$118M	\$50M	12.4M lbs.	\$21M
Multnomah Co. (pop. 756,530)	13.2M lbs.	10.8M lbs.	\$22.6M	\$9.5M	2.4M lbs.	\$4M
Jackson Co. (pop. 206,310)	3.6M lbs.	3M lbs.	\$6.2M	\$2.6M	600K lbs.	\$1M
City of Bend (pop. 79,109)	1.4M lbs.	1.1M lbs.	\$2.4M	\$1M	200K lbs.	\$374K
City of La Grande (pop. 13,048)	228K lbs.	187K lbs.	\$393K	\$165K	41K lbs.	\$70K

Geographic Unit	Total Processed Pork	Processed Pork: Retail (76%)	Processed Pork at Home	Implied Wholesale (42%)	Proc. Pork: Foodservice (24%)	Implied Wholesale (\$1.70 avg.)
Oregon (pop. 3,919,020)	111.6M lbs.	84.8M lbs.	\$128M	\$54M	26.8M lbs.	\$45.6M
Multnomah Co. (pop. 756,530)	21.6M lbs.	16.4M lbs.	\$24.4M	\$10.2M	5.2M lbs.	\$8.8M
Jackson Co. (pop. 206,310)	5.9M lbs.	4.5M lbs.	\$6.8M	\$2.9M	1.4M lbs.	\$2.4M
City of Bend (pop. 79,109)	2.2M lbs.	1.7M lbs.	\$2.6M	\$1.1M	500K lbs.	\$850K
City of La Grande (pop. 13,048)	372K lbs.	283K lbs.	\$425K	\$179K	89K lbs.	\$151K

**Table 8.3: Implied wholesale opportunity for pork.**

The dollar figures above are rough estimates. Consumer spending estimates account only for the resident population, and do not take into account spending by tourists, business travelers, or others who may be present or pass through. Consumer spending figures also do not account for purchases by entities such as schools, hospitals, nursing homes, or prisons that do not pass the cost of food directly to consumers. (These purchases are addressed in more detail below, where information is available.)

It should also be reiterated that the large majority of pork consumed comes from lowest-cost commodity producer/processors. This has bearing on interpreting the scope of the implied wholesale opportunities referenced above.

Industry figures are that 18 percent of packaged pork products bore a “natural” claim in 2010—up from 9 percent in 2004. Opportunities for local and regional pork producers to capture a share of that market or to push that percentage higher vary by marketing channel.<sup>151</sup>

## 8.5. Market Channels

Pork makes its way from farm to market through a number of channels both direct and wholesale.

### 8.5.1. Direct Market—Custom Exempt

Farmers with access to “custom exempt” slaughter and processing can sell “locker pork” directly to consumers—though technically they are selling whole live animals or shares of whole live animals (halves or quarters). Under state license, farmers are not able to sell pork by the piece or by the pound.

<sup>151</sup> “A Snapshot of Today’s Retail Meat Case,” 2010 National Meat Case Study Executive Summary, 2010.

As an example, Wood Family Farm in the Willamette Valley offers customers whole or half hogs with a “hanging weight” of about two hundred pounds. The price per pound paid to the farm is \$3.35. Slaughter and processing charges bring the final cost to about \$4.50/pound or higher depending on requests for curing and smoking. A half hog will end up costing \$450 or more, but will provide 40 to 50 wrapped packages containing 60 to 70 pounds of chops, bacon, sausage, and ham. This will typically fill a standard refrigerator freezer.

Locker pork requires a significant commitment on the part of the customer to make a large upfront purchase, and then store and make good use of a large quantity of meat.

A farmer may produce eight thousand hogs for her own use or to sell as locker pork in Oregon, representing 1.1 million pounds of wrapped pork (at an average yield of 137 pounds of retail cuts per animal). If accurate, that figure represents 0.6 percent of the pork consumed in Oregon.

Given challenges at the farm, processor, and consumer levels, it is difficult to imagine sales of locker pork increasing dramatically in the near future—though that would be a very desirable outcome. Regardless, there is an argument for promoting and educating consumers about the benefits of locker pork.

### **8.5.2 Direct Market—Under USDA License**

Farmers with access to USDA-licensed slaughter and processing are also selling individual cuts of meat direct to consumer at farmers’ markets, thorough buying clubs, and even online. Producers using USDA processing also have the option of selling product to distributors, restaurants, retailers, and institutions.

Selling individual cuts of meat has its own challenges, including inventory management, more complicated pricing, and the need to find viable markets for all parts of the animal. Farmers are often in locations remote from both processors and end markets, requiring travel to deliver animals for processing, to develop and maintain relationships with buyers, and, in some cases, to actually fulfill ongoing orders for meat. There is also a lot of work involved in developing sufficient scale to be able to engage the interest of retail and foodservice customers, and ultimately enter distribution.

Considering the number of processing facilities and with limited and somewhat dated survey data on throughput, it can be estimated that there are likely fewer than four thousand hogs slaughtered in Oregon under USDA inspection each year that are not dedicated to the Carlton Farms brand. That would suggest a total of about 550,000 pounds of finished pork representing 0.3 percent of Oregon consumption.

### 8.5.3. Processing/Manufacturing

There are few examples of food processors/manufacturers sourcing pork raised and processed in Oregon to be featured as an ingredient in products. This requires traceability to the farm and access to USDA-licensed processing necessary for sale of finished products across state lines.

Several independent butcher shops, such as Gartner's Country Meat Market and Otto's Sausage Kitchen, offer fresh sausages and other cured and smoked pork products—and appear to source raw pork primarily from Carlton Farms.

Companies notable in Oregon that offer high-end processed pork products nationally, such as Tails & Trotters and Olympic Provisions, source from Pure Country Pork (Washington) and Carlton Farms, respectively.

### 8.5.4. Retail

US Census County Business Patterns data indicate there were 763 grocery stores and 56 independent meat markets in Oregon in 2012. Many grocery stores are outlets of major chains like Safeway and Kroger, which are likely too large to integrate smaller local pork suppliers—but do carry natural and organic products from multiregional and national companies. As an example, Hemplers Foods Group in Ferndale, Washington, has been successful placing its branded pork products (including hams, bacon, and sausages) in Safeway and Fred Meyer Stores.

However, there are also about 80 independent or natural food stores, like New Seasons Market (12 stores), Market of Choice (9 stores), Whole Foods Market (8 stores in Oregon), Zupan's (4 stores), and about a dozen cooperative grocery stores (like People's Food or Oceana Natural Food), that may be interested in relationships with local suppliers.

Per capita consumption figures and other industry data suggest that the 80 independent stores in Oregon could be vending 14.3 million pounds of pork annually (about 5.7 million pounds fresh and 8.6 million pounds processed)—or the equivalent of 104,000 hogs. This is more than four times Oregon's current production.

New Seasons Market has its store-brand ham cured by Hemplers Foods Group, using pork raised by Pure Country Pork (Washington) and Rieben Farms in Banks, Oregon. It was reported in 2007 that Rieben Farm managed 120 farrowings per year, suggesting production of twelve hundred finished hogs.<sup>152</sup> News Seasons also reportedly assisted Rieben Farms with construction of new hoop houses in 2009.

### 8.5.5. Restaurants

US Census County Business Patterns data indicate there were 3,974 full-service restaurants (not including limited service “fast food”) and 123 catering companies in Oregon in 2012.

<sup>152</sup> “Niche outlet for Oregon pork production,” Stuart Lam, *Pig Progress*, 2007.





Restaurant usage of pork is strongly correlated with breakfast and bacon, with 37 percent of “eatings” associated with breakfast sandwiches or burritos, and another 23 percent represented by servings of bacon alone or on hamburgers.

However, in Portland and Oregon’s wine country, a number of restaurants are known to buy whole and half hogs, to conduct their own butchery and to prepare their own charcuterie. These include Higgins, Ned Ludd, Country Cat, Ciao Vito, and others.

The top 10 percent may be considered “fine dining” and more likely to be engaged in procurement of local products (though primarily through wholesalers). However, it is clear that interest in local and natural pork is widespread across the industry—including with fast casual restaurant chains like Burgerville, Dick’s Kitchen, Little Big Burger, and others. Therefore a 20 percent slice of restaurants may be worth considering.

ERS figures for pork consumption by venue suggest that restaurants nationally serve more than 886 million pounds of fresh pork and 1.7 billion pounds of processed pork annually.<sup>153</sup> Dividing those figures by the 232,000 venues suggests each operator buys an average 3,820 pounds of fresh and 7,300 pounds of processed pork annually.

Using that estimate for 794 Oregon restaurants (top 20 percent) suggests a \$15 million market for 3 million pounds of fresh pork and 5.8 million pounds of processed pork—or the equivalent of 64,000 hogs. This estimate is likely conservative.

### **8.5.6. Farm to Hospital**

Health Care Without Harm (HCWH) is an international environmental health organization that supports sustainable food procurement at hospitals and healthcare facilities, including sourcing of antibiotic-free meat. A 2008 report by HCWH indicated that 44 percent of 112 hospitals surveyed were buying some quantity of hormone- and antibiotic-free meat, and that another 47 percent had plans to start sourcing such products.<sup>154</sup>

A follow-on survey by Oregon Physicians for Social Responsibility in 2009 resulted in detailed reports of pork purchases from four Portland area hospitals. Combined, the four institutions represent about 1,325 hospital beds and reported purchasing about 20,000 pounds of fresh pork (primarily loin chops) and 73,680 pounds of processed pork annually (primarily bacon, pork sausages, and ham).

Extrapolating from those 4 institutions to Oregon’s 33 private hospitals and 6,008 total hospital beds, this suggests hospitals could represent a market for

<sup>153</sup> “Factors Affecting US Pork Consumption,” Christopher G. Davis and Biing-Hwan Lin, USDA, ERS, 2005.

<sup>154</sup> “Menu of Change: Healthy Food in Health Care,” Health Care Without Harm, 2008.

91,000 pounds of fresh pork and 334,000 pounds of processed pork—or the equivalent of 3,100 hogs per year.

With an additional 12,403 beds in Oregon's licensed nursing care facilities, there is potential for the health care sector's demand to be even greater.

Conclusions should be tempered with the knowledge that price remains a major consideration for foodservice in healthcare. Most pork purchases reported are from large, conventional suppliers, such as SYSCO, Swift, and Hormel. The added value of local products from smaller farm suppliers may not be enough to justify paying a price premium.

### **8.5.7. Farm to School**

School Food FOCUS is a national collaborative that is working with fifteen large school districts across the US (including Portland Public Schools and the Beaverton School District) to make school meals nationwide healthier, regionally sourced, and sustainably produced, and has made antibiotic-free meats a priority.

In Oregon, approximately 24 percent of school food budgets are spent on local food—the highest percentage in the nation. (USDA, 2014) Schools, with limited budgets and limited ability to prepare fresh foods, offer an interesting procurement challenge. Portland Public Schools (PPS) has enrollment of about 46,000 students, serves 11,000 breakfasts (24 percent participation) and 21,000 lunches daily (46 percent participation).

PPS does list Zenner's Sausage Company as a local/regional supplier, and features Zenner's all-beef hot dogs on menus. Zenner's also offers a full line of fresh and cooked pork sausages. Information was not available on the source of pork used in Zenner's products.

Offering 3-ounce portions of pork sausage or ham for 11,000 breakfasts would require 2,063 pounds of pork. Offering the same serving as part of a 21,000-lunch seating would require 3,938 pounds of pork.

Extrapolating to the 567,000 students enrolled in districts across Oregon suggests 25,500 pounds would be required each time pork sausage or ham was served for breakfast, and 49,000 pounds for each lunch. If sausage from local pork were featured monthly during the school year on both menus, that suggests a need for 3.6 million servings—670,000 pounds or the equivalent of 4,900 hogs.

Extending that scenario to serve sausage monthly to the approximately 190,000 students enrolled in Oregon universities and colleges suggests a need for another 225,000 pounds of pork per year—the equivalent of 1,640 hogs. Universities and colleges would also have more opportunity to utilize fresh pork in dining halls—for example, serving pull-pork or carnitas from less expensive pork shoulder roasts

The combined total for education is 895,000 pounds or about 6,540 hogs.



## 8.6. Demand Summary

Combining the estimates provided for retail, restaurants, hospitals, and educational institutions suggests there is potential demand in Oregon for about 24.4 million pounds of pork that offers a combination of desired attributes including: local/regional, antibiotic free, hoop house–raised or pasture–raised. This is the equivalent of about 120,000 hogs.

The total represents about 13.6 percent of pork consumed in Oregon—and more than five times the number of hogs produced in Oregon each year.

The breakdown by channel is approximately as follows:

- Retail: 59% ~14.3 million lbs. (40% fresh/60% processed) 104,000 hogs
- Restaurants: 36% ~8.8 million lbs. (34% fresh/66% processed) 64,000 hogs
- Hospitals: 1.5% ~425,000 lbs. (21% fresh/79% processed) 3,100 hogs
- Education: 3.5% ~895,000 lbs. (10% fresh/90% processed) 6,540 hogs

An unknown percentage of this demand is currently being met by Carlton Farms and by other small regional pork producers with access to USDA slaughter and processing. The online AMFIBI business directory estimates that Carlton Farms annual sales are between \$12.5 and \$15 million. A conservative estimate would be that existing regional pork brands are meeting less than 20 percent of the potential demand in Oregon identified above, and only by drawing large numbers of hogs from out of state.

## 8.7. Oregon Pork Production

The 2012 USDA Census of Agriculture shows a total of 1,172 farms in Oregon reported sales of hogs and pigs. The number of farms is down 20 percent from 2007 (294 fewer farms).

Oregon farmers sold a combined total of 23,063 hogs/pigs in 2012 with a total estimated value of \$3.195 million. This is a 52 percent decline in the number of animals since 2007 (24,800 fewer), and a 44 percent decrease in total value (down \$2.467 million).

Smaller-scale hog production tends to yield animals with weights below the conventional target of 240 to 270 pounds live-weight at slaughter. Using an average weight of 240 pounds with a standard yield of 57 percent for edible retail cuts, Oregon farmers produce enough hogs to generate 3.2 million pounds of finished pork.<sup>155</sup> This is sufficient to satisfy less than 2 percent of in-state consumption of pork. (Hog production is of similar scale in Washington, with some 27,000 animals sold in 2012, and appears to be growing rapidly in Idaho, with sales more than doubling from 66,000 animals in 2007 to 145,000 in 2012.)

<sup>155</sup> “How Much Meat?” Oklahoma Dept. of Agriculture, Food, & Forestry, (n.d.).

Of all farms reporting sales of hogs and pigs in 2012, 87 percent sold fewer than 24 head (1,014 farms). Combined, those smallest farms represented 5,465 head (an average just over 5 animals per farm).

The 143 farms in the low-middle, with sales between 25 and 200 head, sold a combined 8,118 animals (an average of 57 per farm).

Twelve farms in the high-middle, with sales between 200 and 500 head, sold a combined 3,203 animals (an averaged 267 per farm).

The 3 largest farms sold a combined 6,277 animals. One farm sold between 500 and 1,000 animals. Two farms sold over 2,000 animals. It is presumed that farms in this top tier either sell to Carlton Farms or have animals processed for sale to the New Seasons Market grocery store chain.

While there are probably opportunities for midsized and smaller farms to capture a larger share of Oregon's demand for both fresh and processed pork, the first step will have to be increasing hog production. The key questions are what it might take to incentivize producers to step up from 5 animals per year, to 50, to 250 and possibly beyond, what production systems are best suited for Oregon, and what capital costs might be involved.

## 8.8. Small Pork Producer Challenges

Hogs can be raised year-round, with farrowing of piglets timed to allow sequential harvest of finished hogs at about six months of age. However, some structure is required to support farrowing in winter months, which adds to both cost and labor.

A 2004 study of niche pork at Iowa State University notes:

“One of the challenges for pork niche marketers is maintaining a steady supply of pork. Because most of the markets require that pigs be born outdoors or on bedding, a majority of the pigs are farrowed outdoors during favorable periods, such as late spring through early fall in the Midwest. Indoor farrowing is avoided because of high labor requirements, cold temperatures, lack of facilities, or high piglet disease. This creates a shortage of marketable pigs during the summer for many niche markets. Some niche markets will not accept new producers unless they agree to farrow pigs during the winter. Farmers have tried various approaches to improve alternative winter farrowing systems. Many involve using the outdoor farrowing huts in various indoor structures including pole barns, greenhouses, and hoop barns. Supplemental heat is essential.”<sup>156</sup>

---

<sup>156</sup> “The Pork Niche Market Phenomenon,” Mark Honeyman, R. S. Pirog, G. Huber, Animal Industry Report, 2004.

USDA SARE describes potential costs:

“Originally developed in Canada, ‘hoops’ usually hold up to 250 hogs on an earthen floor that is heaped with a generous amount of bedding. The structures are topped with 15-foot-high steel arches covered with fabric tarps. Iowa State University researchers found that initial investment was about one-third cheaper for hoop barns than confinement barns. Confinement operations cost a producer \$180 per pig space versus just \$55 for a space in a hoop structure. Initial hoop barn construction costs vary from \$9,000 to \$16,200 to hold 200 head—compared to \$150,000 to \$200,000 for confinement structures that hold 1,000 head.”

ERS figures from 2008 show feed representing 41 percent of production costs for a farrow-to-finish operation—and feed costs in the Northwest are another limiting factor for pork production. Other more recent estimates show feed running as high as 65 percent of all costs. One small-scale Washington producer in 2010 described feeding a pig 600 to 800 pounds of feed from wean to finish with feed at a cost of \$290 per ton. In 2013, Wood Family Farm noted it was paying \$590 per ton for feed.<sup>157</sup>

However, it is possible to grow or source and mill appropriate feeds in the Northwest. Rieben Farm in Banks, Oregon, grows two hundred acres of wheat, alfalfa, oats, and clover, which is milled on-farm for feed. Heritage Farms Northwest in Dallas, Oregon, raises its hogs on grass and clover pasture, and supplements their diet with wheat (purchased from a neighbor) and 10 percent soy meal for added protein.

A 2012 study at the University of Illinois on factors affecting the profitability of niche pork enterprises suggests:

“Producers should focus on controlling costs, especially feed costs, and improving breeding and farrowing efficiency. Production efficiency is important throughout the farrow-to-finish enterprise. Feed conversion ratios are key in the grow-out phase and litters weaned per sow per year seem to be the more crucial variable to efficient breeding and farrowing. Years of niche experience (which is beyond the control of the producer) adds to the overall management efficiency of the operation. Finally, the one area where niche production differs from conventional production is supply chain partnering and further specialization of products. Overall firm profitability may be enhanced by carefully choosing marketing partners and targeting specialty markets within the niche pork segment.”<sup>158</sup>

<sup>157</sup> “How Much Does it Cost to Raise a Pig: July 2010,” Bruce King, *Meat*, 2010.

<sup>158</sup> “Determinants of Profitability in Niche Swine Production,” Dwight Sanders, Ira Altman, Gary Apgar, *Journal of the ASFMR*, 2012.

## 8.9. Oregon Pork Processing

The Niche Meat Processor Assistance Network lists ten USDA slaughter facilities in Oregon that as of October 2012 are accessible to producers.

- Bartels Packing, Eugene
- Carlton Packing Co, Carlton
- Central Oregon Butcher Boys, Prineville
- Dayton Natural Meats, Dayton
- Malco's Buxton Meat, Sandy
- Marks Meats, Canby
- Mohawk Valley Meats, Springfield
- Mt. Angel Meat Company, Mt. Angel
- Oregon Beef Company, Madras
- Stafford's Custom Meats, Elgin

ODA reported in 2009 that Oregon is also home to:

- 50 USDA inspected meat processors (no slaughter–secondary processing only)
- 55 custom mobile slaughter trucks
- 12 custom slaughterhouses
- 86 custom meat processors

There are typically two models for plants: “slaughter-processing” companies that buy live animals and sell meat and “custom slaughter” companies that provide fee-for-service processing. The Agricultural Marketing Service notes:

“The cost of acquiring hogs typically comprises 70 percent of the cost of the slaughter-processing company. This cost runs higher for niche hogs such as organic. The kill and cut costs for a large, well-capitalized multi-plant operation employing two shifts range from \$10 to \$12 per hog. Smaller plant costs are in the mid-teens. Most custom slaughter operations charge about \$25 per pig broken into sub-primals with some a little higher, depending on the volume. Additionally, most packing plants have some sort of scheme to pay the producer for those edible items that he/she does not take. Normally these prices are at the low end of the commodity range for the items. All custom operations keep the “drop” or byproducts, which are worth \$3 to about \$8 per head, depending whether the pig is skinned. Another major challenge is that everybody wants to sell the loin, which represents just less than 20 percent of the carcass. There is really no romance in the hocks, spare ribs, back ribs or any shoulder meat that may be sold as fresh meat. Thus, with only about one-third of the pig being sold as fresh meat, the balance is further processed primarily into ham, bacon and sausage.”

A 2009 study in Georgia concluded that a small slaughter-processing plant could be operated profitably:

“The business model under consideration will process natural pork carcasses for sale in the wholesale and retail markets. The animals are slaughtered off-site and then returned to the plant for fabrication. The plant is assumed to operate 5 days a week year round. The expected processing throughput is 11 head per day. Based on these assumptions, the estimated annual head slaughtered would total 2,750. . . . Assumptions set forth in this analysis include a 78 carcass weight and 69 turnout of products available for sale from of a 260 lb. live weight animal. The resulting carcass is 203 , which is sold at an average price of \$2.15 per pound. Other sales reflect the resulting products available after cutting at 69 of live weight, or 180 of product. The average price per pound utilized for other sales is \$3.02, which represents a weighted average of historical sales by product per carcass. Operating and fixed costs were estimated for this venture based on historical costs and prior feasibility studies . . . the total projected operating costs total \$1,170,924 and total fixed costs are estimated to be \$56,665 per year. The resulting total annual costs are just under \$1.228 million or \$446.40 per head processed. Direct animal cost and labor and benefits represent the two largest expenditures of total operating cost at 37% and 22% respectively. Revenue projections were estimated based on current sales. It was assumed that 67% or the total output would be sold to a supermarket chain. The remaining 33% will be marketed to local retailers and through an on-site retail outlet. Average prices and cuts were utilized to project a price per pound . . . carcasses sold to the supermarket chain is assumed to be \$2.15. . . . For all other sales, a blended average price of \$3.02 is assumed. The projected product sales per carcass for other sales are assumed to be 180 pounds. Given the estimated revenue of \$1.296 million and total cost for the facility of \$1.227 million, the estimated net income is \$68,868 for a return of \$25 per head. The resulting return on investment is 20%.<sup>159</sup>”

One major benefit of expanding hog production in Oregon would be increased need for year-round processing. That would help keep existing plants going in winter months, when they may be shuttered following the fall rush to harvest and process cattle. That would in turn help attract and retain skilled staff.

## 8.10. Support Infrastructure for Pork

Beyond processing capacity, it is important to consider other support infrastructure necessary for production and marketing of pork.

### 8.10.1. Feed

Feed is the major input for pork production, accounting for as much as 65 percent of production costs. A variety of feeds are used, including corn, barley, sorghum, oats, and sometimes wheat. Distillers' grain (spent barley from brewery operations) is also used. There is also a tradition of feeding hogs wastes and expired products from dairies, bakeries, and other food-processing

<sup>159</sup> “Feasibility of Locally Processed and Branded Pork Products in South Georgia,” Audrey Luke-Morgan, The University of Georgia, College of Agricultural and Environmental Sciences, 2009.

businesses. Finding a regular, reliable, and cost-effective source of feed will be critical to scaling local pork production.

### **8.10.2. Rendering**

As with beef, better access to rendering for wastes could reduce pork-processing costs and improve profitability.

### **8.10.3 Cold Storage**

Costs to build dedicated cold-storage facilities may have to be considered.

### **8.10.4. Distribution**

Smaller local or regional pork producers are unlikely to see their products carried by large broadline distributors such as Food Services of America or SYSCO. Once some scale is achieved, there may be opportunities to work with associated businesses, such as Fulton Provision Company (owned by SYSCO). There are also some smaller, specialty distributors that may offer more immediate support. These include companies like SP Provisions, and Nicky USA.

## **8.11. Paths Forward**

There appear to be at least three paths forward for further development of local/regional hog production, processing, and marketing.

### **8.11.1. Farmer-Marketer Model**

Pure Country Pork is a farrow-to-finish farm that raises hogs in open-air hoop houses using a deep-bedded straw system over a concrete slab (avoiding high infrastructure costs). The operation is Food Alliance certified for sustainable practices and humane animal care, and does not use antibiotics or feeds derived from animal proteins. Hogs are fed Non-GMO-certified Northwest grains and pulses (triticale, wheat, barley, and peas), with supplemental vegetable protein, flax seed, vitamins, and minerals. Manure is composted with straw and used to fertilize surrounding grain fields. Pictures on the farm website show hogs in the various stages of the operation and contribute to transparency. Pure Country markets pork direct to consumers, at a local farmers' market, and to natural food stores including twelve New Seasons Market stores in Oregon and ten PCC Market stores in Washington—as well as to customers as far away as Japan seeking high quality, natural pork. Pure Country raises small groups of hogs to customer specifications using custom feed regimes. (See Tails & Trotters below.) Owner Paul Klingeman is also a marketer for the White Trail hog pool, helping connect other regional producers and packers. Having lower infrastructure costs, market diversity, and customer loyalty has helped Pure Country weather cycles that have led other Northwest hog producers to close.

### **8.11.2. Brand Led Value Chain Model**

Tails & Trotters is a fresh and processed pork wholesale, retail, and restaurant operation developed by entrepreneurs Aaron Silverman and Mark Cockcroft. (Aaron was also the owner of Greener Pastures Poultry, discussed in the chapter on chicken.) Tails & Trotters (T&T) differentiates its products with





a USDA-verified “hazelnut finished” feed regimen for its hogs. This creates unique flavor and marbling desirable for production of Tails & Trotters prosciutto, other high-end cured meats such as guanciale and pancetta, and specialty products such as pâtés and sausages. The company operates a small retail butcher shop and deli counter, but otherwise owns no infrastructure. Instead Tails & Trotters has worked carefully to develop “value chain” partnerships with a number of regional business partners. Over time these have grown to include: a hazelnut grower and packer, a mid-sized hog farmer (Pure Country Pork), a USDA-licensed slaughter and processing facility (Carlton Farms), a USDA-licensed secondary processing facility and regional meat distributor (Nicky’s USA), an Oregon-licensed commercial kitchen, and a national distributor. Production began in 2009. The company won a national Good Food award for its “porkstrami” in 2012. Tails & Trotters now services wholesale accounts including butcher shops and some three dozen restaurants in Oregon and Washington. Using existing infrastructure has helped keep business investment costs low while the company developed products, markets, and sales to support further growth. Plans call for construction of a USDA-certified meat processing and curing facility.

### **8.11.3. Contracted Supply Pool Model**

New Seasons Market operates a dozen natural food stores in the Portland area, and prioritizes local and regional products, which are identified in the store with shelf tags. New Seasons Market operates full service butcher counters and has capacity to receive and break down “primal cuts” of pork, beef, and lamb into retail cuts for the meat case. New Seasons Market contracts with Pure Country Pork and Rieben Farms for hogs, which are slaughtered and processed at Dayton Meats (owned by Chuck Eggert, CEO of Pacific Foods, who was one of the three founders and a lead investor in New Seasons Market). New Seasons Market fabricates fresh sausages in its stores, but contracts curing of hams to Hemplers Foods Group in Washington. New Seasons Market does purchase Carlton Farms products to fill the meat case, but is actively seeking additional local suppliers for meat products for its private label brand, and has even offered small loans to help suppliers expand. The company also has a preference for products that are third-party certified organic, Non-GMO, or under other programs that provide assurance for humane care and sustainability. News Seasons’s close and committed relationship with farmers helps ensure supply and supports communication of the “farm story” to customers seeking high-quality, local, “values-added” products.

### **8.11.4. Analysis**

There are no clear prospects for expanding or replicating the farmer-marketer model in Oregon in the immediate future with the rate at which hog farmers have been exiting production over the last five years and the fact that there is no farmer-led pork brand in the state operating at medium scale (as with Painted Hills Beef or Umpqua Valley Lamb). However, the space seems ripe for a farmer-entrepreneur to step forward, who might eventually work collaboratively with other farmer partners to develop markets and fulfill demand.



The brand-led value chain model also seems challenging. Tails & Trotters value proposition is based on a unique feeding regimen involving hazelnuts, which requires a relationship with the farm to achieve. Founder Aaron Silverman has said definitively that he did not see any farm in Oregon capable of delivering the number of hogs needed that would meet his specifications. Tails & Trotters has also—due to necessity—been willing to accept whole carcasses and work creatively to develop markets for fresh and processed products that will utilize all cuts from the animal. Other producers and purveyors of high-end cured meats, such as Olympic Provisions, offer gourmet quality—but meet ingredient needs at lower risk, buying only cuts needed from Carlton Farms.

The contracted supply pool model seems promising with the implicit market pull. The question is why a willing customer like New Seasons Market would have trouble finding suppliers of local pork to meet its goals. Part of the challenge may be perception—that hog farming as conventionally practiced is capital intensive and unpleasant (with confinement, manure lagoons, odors, etc.) reducing quality of life and leading to conflicts with neighbors. Part of the challenge is likely a commodity mindset, which dictates that Northwest hog producers will never be able to compete on cost with Midwest producers (due to scale and feed costs). And part is certainly a lack of knowledge and experience with relatively new hoop house and pasture systems.

## Conclusions

Ecotrust's assessment of demand for local/regional pork products suggest a potential market for 120,000 hogs or about 24.4 million lbs. of fresh and processed pork. The total represents about 13.6% of pork consumed in Oregon, and more than five times the number of hogs currently produced in Oregon.

Oregon hog producers are likely meeting less than 1 percent of state demand for pork products and have a fourteen-times market development opportunity—though finished cost of goods will be a factor realizing that potential.

Pure Country Pork in Washington has shown it is possible to raise hogs in hoop houses profitably in the Pacific Northwest. There are also demonstrably willing buyers for additional hogs raised in that system.

The initial challenge may be perceptual. Why don't Oregon farmers see an opportunity to sell hogs or develop their own pork brands? Concerns about capital investment costs, feed costs, and quality of life likely play a role. A survey to assess perceived barriers, outreach to build awareness of potential opportunities, and education on hoop house and pasture production systems could be valuable.

The 120,000 hogs necessary to meet demand referenced above imply construction of some three hundred hoop houses at a minimum cost of \$3.9 million (\$13,000 per) for concrete slabs, metal bracings, covering materials,



and some interior fixtures. Additional costs may include fencing, feed storage, and milling facilities, loading docks, road building, etc.

Estimates are that 120,000 hogs will also consume 84 million pounds of feed. Since feed reportedly represents 41 percent to 65 percent of production costs, it is a significant challenge for commodity producers competing with large hog operations in the Midwest—but may be less of a factor for farmers pursuing local, regional, and other “values-added” opportunities. A number of Northwest producers are already operating their own small feed mills and utilizing local grain and pulse crops as inputs—and “closing the loop” by offering composted hog manure as fertilizer for crop production.

There are significant potential benefits to increasing hog production and processing in Oregon.

The Leopold Center for Sustainable Agriculture has estimated that for small facilities in Iowa each 1,000 hogs processed support 3.2 jobs and \$110,361 in local wages. Applying that finding to the 120,000 hogs this report estimates might be required to meet demand for local pork suggests an industry that supports 384 jobs and \$13,243,320 in local wages annually.

Grain and pulse producers would certainly benefit from a growing local market for animal feed. Demand from hog producers would also aid chicken producers, who would benefit from increasing availability and possibly reduced cost for feed.

In addition, a major benefit of expanding hog production in Oregon would be increased need for year-round slaughter and processing. That would help keep existing multispecies processing plants active in winter months, when they may be shuttered following the fall rush to harvest and process cattle. That would in turn help attract and retain skilled staff, spread operating costs to increase profitability and even reduce processing costs to producers, and even justify additional investment in equipment, facilities, and other capacity.

Expansion of hog production could therefore be valuable not only for its own sake, but also to support the development and profitability of both the chicken and beef industries.