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Appendix 3
Portland Regional Food System Economic Analysis

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with data from

Metro Portland (Oregon), Local Farm & Food Economy, May 2011
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Oregon Agriculture and the Economy: An Update
Oregon State University Extension Service Rural Studies Program

Produced for Western Sustainable Agriculture Research and Education

Introduction

The Portland metropolitan area is well known nationwide for its cutting edge sustainability vision and urban development and farmland protection framework. The region has a large number of productive small farms within and near urban areas. There is a growing interest in, and support for, locally grown, sustainable food. This interest is driven by rising concerns over public health, food security, transportation costs, climate change, economic turmoil and the search for a more community-based, sustainable lifestyle. There is growing support for farmers markets, community supported agriculture, community gardens, local healthy food school programs and institutional purchases of fresh, locally grown produce. Increasing locally-sourced fruits and vegetables is also a goal of the Regional Food Bank.

Western Sustainable Agriculture Research and Education (SARE) is funding a study to examine key agricultural trends, identify producer needs and define strategies to strengthen the local food production system. The goals of the study are to:

- Define the Portland Metropolitan Foodshed; identify related agricultural and economic trends and develop a needs assessment based on input from producers and other stakeholders.
- Assemble a regional toolkit of strategies to support evolution of a sustainable Portland Metropolitan Foodshed.
- Work with the City of Damascus, Oregon to test the toolkit on a local level.
- Develop a research and educational program that supports these goals and supports small and medium farmers in the region.

This Portland Region Food System Economic Analysis portion of the SARE study seeks to examine the nature and size of the Portland regional food market. The analysis draws heavily from a study by Ken Meter of the Crossroads Resource Center, *Metro Portland (Oregon), Local Farm & Food Economy* and *Oregon Agriculture and the Economy: An Update* from the Oregon State University Extension Service Rural Studies Program. For the purposes of this study, the Portland region includes Clackamas, Columbia, Multnomah, Washington, and Yamhill counties. This is a smaller region than the standard Metropolitan Statistical Area, which also includes Clark and Skamania Counties in Washington.

Oregon Food Economy

There are approximately 38,500 farms in Oregon growing 220 different commercially-grown agricultural crops. Approximately 85% of Oregon farms are operated by sole proprietors and another 10 to 12 percent are family partnerships or corporations. The farm gate value of Oregon's agricultural sector is valued between $4-5 billion, with 70% coming from crops and the rest from livestock.[1]

Oregon agricultural acreage declined seven percent between 1997 and 2007. There are 1,422 fewer farms in 2007 than in 1997 and the average size of a farm shrunk from 442 to 425 acres. This decline has been slowed to some degree by the increase in the number of adaptive farms of fewer than 50 acres. Adaptive farms are typically smaller farms that produce a variety of outputs and tend to have average gross sales per acre approximately twice the overall average.

[1] "Crops" refers to plants produced by farmers, including grains, fruit, nuts, vegetables, Christmas trees, nursery or ornamental crops, grass seed, vegetable seedlings and many other products. "Livestock" sales include animals (Cattle, hogs, poultry, sheep, etc.) or products derived from these animals (milk, eggs, leather, offal, etc.)

There are approximately 16.5 million acres of farmland in Oregon, over half of which are occupied by cattle ranching and farming operations. As shown in Table 1, smaller acreages are used for food crops, such as grains, vegetables, and fruits and nuts.

Table 1. Oregon farmland acreage by type (2007)

Type	Acres	Share (%)
Grain farming	2,097,777	12.8
Vegetable farming	242,192	1.5
Fruit & nut farming	253,189	1.5
Greenhouse, nursery, & floriculture production	264,844	1.6
Other crop farming (hay, mint, other crops)	2,815,956	17.2
Cattle ranching & farming	9,409,053	57.4
Hog & pig farming	12,975	0.1
Poultry & egg production	41,530	0.3
Sheep & goat farming	205,664	1.3
Horse & other equine production	673,445	4.1
Other animal production	383,022	2.3
Total	**16,399,647**	**100.0**

Source: U.S. Department of Agriculture, *2007 Census of Agriculture*, Table 46 (February 2009).

Since 2002, the number of Oregon farms in organic production has nearly doubled with the number of farms increasing from 515 to 933 farms. Table 2 shows the market value of organic farm sales has increased dramatically from just under $10 million in 2002 to more than $88 million in 2007.

Table 2. Organic Agriculture, Oregon (2002 and 2007)

Category	2002	2007
Total land used for organic production (acres)	N/A	92,405
% of total farmland	N/A	0.6
Number of farms in organic production	515	933
% of total number of farms	1.3	2.4
Land being converted to organic production (acres)	N/A	16,175
Farms being converted to organic production	N/A	470
Market value of organic farm sales ($000)	9,933	88,379
% of total market value of farm sales	0.3	1.9

Sources: U.S. Department of Agriculture, *2007 Census of Agriculture*, Table 43 (February 2009) and *2002 Census of Agriculture*, Table 2 (June 2004).

Five of Oregon's processing sectors make up 62.3 percent of processing sales in Oregon: frozen food manufacturing ($1.9 billion); dairy ($1.9 billion); fruit and vegetable canning, pickling, and drying ($1.6

billion); breweries, wineries, and distilleries ($1.3 billion); and bakery goods, pasta, and tortilla manufacturing ($906 million).

Table 3 divides the Oregon food economy into seven sectors and summarizes agricultural sales, employment, and value-added expenditures for 2009. Processing made up the largest portion of agricultural sales, with an output of more than $12 billion, followed by food services ($7.7 billion) and production ($4.3 billion). Food services employed more than half of all employees in Oregon's food economy and produced more than $4 billion of added value.

Table 3. Oregon Agricultural Output, Employment and Value Added (2009)

Aggregated sector	Output—Sales ($000)	Employment (full- & part-time jobs)	Value added ($000)
Production	4,321,666	54,120	1,607,990
Processing	12,355,613	31,308	2,232,797
Ag. support services	238,105	7,762	182,820
Wholesale trade	2,568,297	12,958	1,689,559
Transportation & warehousing	743,518	4,859	356,620
Retail trade	980,933	16,369	828,492
Food services & drinking places	7,696,380	133,365	4,026,638
Total agriculture	**28,904,512**	**260,742**	**10,924,917**
Total all Oregon sectors	**278,803,857**	**2,177,594**	**153,024,613**
Portion agriculture (%)	10.4	12.0	7.1

Source: Oregon State University Extension Service, Rural Studies Program, February 2011

These expenditures and employment have a broader impact on Oregon's economy. Each agricultural sector influences a wide range of suppliers. These indirect expenditures include purchases for food, medical services (e.g. veterinarians), and retail goods among others. Table 4 shows the direct and indirect expenditures that make up the footprint of Oregon's food economy.

Table 4. Oregon Agriculture Direct and Indirect Expenditures (2009)

Aggregated sector	Output—Sales ($000)	Employment (full- & part-time jobs)	Value added ($000)
Production	5,745,810	62,885	2,622,376
Processing	20,541,299	98,815	6,991,892
Ag. support services	501,025	9,847	325,967
Food services & drinking places	14,610,626	188,036	7,944,652
Subtotal—Production, processing, ag. support services, and food services & drinking places	*41,398,759*	*359,583*	*17,884,887*
Wholesale trade	4,636,806	30,368	2,928,210
Transportation & warehousing	1,418,687	10,873	759,378
Retail trade—Food and beverage	1,641,518	22,067	1,223,297
Total agriculture	**49,095,771**	**422,891**	**22,795,773**
Total all Oregon sectors	**278,803,857**	**2,177,594**	**153,024,613**
Portion agriculture (%)	17.6%	19.4%	14.9%

Source: Oregon State University Extension Service, Rural Studies Program, February 2011

Table 5 represents the external demand from outside Oregon for goods and services related to the major parts of Oregon's food economy, with processing showing the greatest demand.

Table 5. External Demand for Oregon Agriculture (2009)

Aggregated sector	Total ($000)	Share (%)
Production	2,686,808	2.95
Processing	7,448,031	8.17
Ag. support services	48,323	0.05
Food services & drinking places	934,845	1.03
Wholesale trade	520,527	0.57
Transportation & warehousing	156,202	0.17
Retail trade	184,636	0.20
Total agriculture	**11,979,372**	**13.14**
Total all Oregon sectors	**91,159,458**	**100.00**

Source: Oregon State University Extension Service, Rural Studies Program, February 2011

As much as 80% of the agricultural products produced in Oregon are sold out-of-state and half of that is exported to foreign countries. The impacts of the external demand for agriculture throughout the Oregon economy are summarized in Table 6.

Table 6. Summary of Oregon Agricultural Economic Impacts (2009)

Aggregated sector	Output—Sales ($000)	Employment (full-& part-time jobs)	Value added ($000)
Production	4,884,028	52,128	2,143,749
Processing	14,666,472	71,612	5,016,120
Ag. support services	101,683	1,999	66,155
Food services & drinking places	1,774,688	22,840	965,002
Subtotal—Production, processing, ag. support services, and food services & drinking places	*21,426,871*	*148,578*	*8,191,027*
Wholesale trade	939,760	6,155	593,472
Transportation & warehousing	296,560	2,049	156,800
Retail trade	308,974	4,154	230,255
Total agriculture	**22,972,165**	**160,936**	**9,171,553**
Total all Oregon sectors	**278,803,857**	**2,177,594**	**153,024,613**
Portion agriculture (%)	8.2	7.4	6.0

Source: Oregon State University Extension Service, Rural Studies Program, February 2011

Portland Regional Food Economy

The food economy can be divided into four sector components: production, processing, distribution and consumption. Table 7 provides information for food-related businesses in the Portland region according to these sectors. Consumption comprises more than half of the annual payroll and two-thirds of the employees in the Portland regional food economy.

Table 7. Food-Related Businesses in the Portland Region (2008)

Sector	Business Type	Number of Firms	Employees	Annual Payroll
Production	Agricultural Supply	103	916	$37 million
Production	Farm and Garden Machinery Wholesalers	43	414	$18 million
Production	Farm employees	-----	21,429	$450 million
Production	Farm operators	9,233	11,418	($53 million)
	Production Sub-Total	***9,379***	***34,177***	***$452 million***
Processing	Food Manufacturing	239	8,536	$329 million
Processing	Beverage Manufacturing	98	1,596	$47 million
	Processing Sub-Total	***337***	***10,132***	***$376 million***
Distribution	Grocery Wholesalers	275	7,917	$336 million
Distribution	Farm Product Wholesalers	28	224	$22 million
Distribution	Alcoholic Beverage Wholesalers	49	2,340	$102 million
	Distribution Sub-Total	***352***	***10,481***	***$460 million***
Consumption	Food & Beverage Retail	992	21,616	$531 million
Consumption	Food Services and Drinking Places	5,090	79,497	$1.153 billion
	Consumption Sub-Total	***6,082***	***101,113***	***$1,684 million***
	Total	**16,150**	**155,903**	**$2,972 million**

Data cover the Portland Metropolitan Statistical Area; population of 2.2 million. Non-farm employment is drawn from U.S. Bureau of the Census, County Business Patterns. Farm data is compiled from Bureau of Economic Analysis regional economic profiles for the seven counties in the Portland Metropolitan Statistical Area. "Payroll" for employees is taken from total cost of farm labor reported by the region's farms. "Payroll" for farm operators is net cash income from farming for metro area farms.

Production

Land

The Portland region's 9,233 farms encompass more than 500,000 acres, amounting to three percent of the state's farmland and 24 percent of Oregon's farms. As shown in Table 8, Clackamas County has the greatest number of farms (3,980) and farm acreage (182,743) in the Portland metro area, followed by Yamhill County (2,155/152,212), Washington County (1,761/127,984), Columbia County (805/52,102) and Multnomah County (563/17,832). The region has seen a decrease in the number of farms since 2002. The most prevalent farm size is 10-49 acres with a total of 4,138 farms (45%) with an average size of 63 acres. Approximately 78 percent of farms are less than 50 acres (7,174 farms) while only one percent 1,000 acres or more.

Table 8. Region Farm Types (2007)

Farm Typology (2007)	Clackamas		Columbia		Multnomah		Washington		Yamhill		Portland Metro	
	Farms	Acres	Farms	Acres	Farms	Acres	Farms	Acres	Farms	Acres	Farms	Acres
Limited-resource	500	14,029	98	2,981	68	2,691	221	6,037	258	9,822	1,145	35,560
Retirement farms	969	37,341	220	13,068	136	N/A	365	15,465	467	28.663	2,157	65,903
Residential/lifestyle	1,668	35,341	360	20,960	191	4,324	670	15,567	899	29,902	3,788	106,094
Farming occupation/ lower sales	461	17,703	100	6,748	81	2,515	229	13,043	216	12,419	1,087	52,428
Farming occupation/ higher sales	72	8,237	8	N/A	20	N/A	49	8,446	39	8,341	188	25,024
Large family	48	12,733	4	N/A	17	2,095	46	13,879	32	13,615	147	42,322
Very large family	88	32,778	2	N/A	20	6,207	70	32,973	57	46,453	237	118,411
Nonfamily	183	24,581	13	8,345	30	N/A	111	22,574	147	31,631	484	87,131
Total	**3,989**	**182,743**	**805**	**52,102**	**563**	**17,832**	**1,761**	**127,984**	**2,115**	**152,212**	**9,233**	**532,873**

Farms in the Portland region have 297,465 acres of harvested cropland. Approximately 27 percent (2,481 farms) have a total of 90,391 acres of irrigated land, 144 of which receive irrigation water from the U.S. Bureau of Reclamation.

The average value of land and buildings per farm is $665,945; 83 percent of the state average of $804,145. The region's farmers received an average combined total of $61 per year million in subsidies (11-year average, 1999-2009), mostly to raise crops such as wheat or corn that are sold as commodities, not to feed the region's residents.

2,128 (23%) farms use conservation practices such as no-till, limited tilling, filtering field runoff to remove chemicals and fencing animals to prevent them from entering streams. 1,873 (19%) farms use rotational management or intensive grazing and 101 farms generate some electricity on the farm.

Sales

Portland region farms sell $799 million of products (food and fiber) per year (1969-2009 average). Sales of nursery crops, ornamental shrubs, Christmas trees and grass seed make up a large share of these sales. Even major food items (fruits, nuts and berries; poultry and eggs; and milk and dairy) are often sold as commodities for further processing, not as food for direct human consumption. Furthermore, these products are often exported out of the region.

Portland region farms sold more than $1 billion worth of products in 2007, as shown in Table 9. Nursery and ornamental products make up the majority of these sales, totaling more than $600 million. Food sales totaled approximately $392 million in 2007. The top-selling food products were fruits, nuts and berries at $139 million followed by forage products ($86 million) and poultry and eggs ($59 million).

Table 9. Top Products Sold by Portland Region Farms (2007)

Product	Food Sales	Nonfood Sales	Total Sales
Nursery and ornamentals*		$608,000,000	$608,000,000
Fruits, nuts & berries	$139,000,000		$139,000,000
Forage*	$86,000,000		$86,000,000
Poultry & eggs	$59,000,000		$59,000,000
Christmas trees*		$54,000,000	$54,000,000
Vegetables	$46,000,000		$46,000,000
Milk & Dairy*	$34,000,000		$34,000,000
Cattle & calves	$20,000,000		$20,000,000
Wheat*	$8,000,000		$8,000,000
Horses*		$5,000,000	$5,000,000
Total	**$392,000,000**	**$667,000,000**	**$1,059,000,000**

*Sales totals incomplete due to data suppression by USDA.

More than $943 million of crops were sold in 2007 (88% of sales). Over $128 million of livestock and products were sold by 3,945 farms (12% of sales), a 15 percent decrease in the number of farms selling livestock and 9 percent increase in sales since 2002. Approximately 71 percent (6,553 farms) of the region's farms sold less than $10,000 of products in 2007. Their aggregate sales of more than $13.4 million amounted to about one percent of the region's farm product sales. 896 farms (10%) sold more than $100,000 of products, an aggregate total of over $1 million, about 94 percent of the region's farm product sales.[2] Approximately 66 percent (6,077) of the region's farms reported net losses in 2007, similar to the Oregon average of 65 percent. In 2002, 719 farms received $3.2 million of federal subsidies.

The $1 billion of crops and livestock sold in 2007, represents 24 percent of state agricultural sales. Farm product sales were 23 percent higher than the 2002 level of $869 million. Total farm production expenses were $879 million, an increase of 28 percent over 2002.

Vegetables & Melons

In 2007, 402 farms produced vegetables on 13,833 acres of land, 367 of which sold $46 million of vegetables and potatoes. This was a decrease of 26 percent in the number of farms and an increase of 29 percent in sales over 2002.

Fruits

The Portland region has 1,413 orchards on 29,955 acres of land. A total of 1,530 farms in the region sold fruit, nuts, or berries, for total sales of $139 million. This represents a 12 percent decline in the number of farms and an 84 percent increase in sales over 2002.

Grains, Dry Edible Beans, Oil Crops, and Others

In 2007, 188 of the Portland region's farmers sold 1,239,355 bushels of wheat, mostly winter wheat, raised on 14,079 acres.[3] The region's wheat crop sold for more than $8 million.[4] 106 farms raised

[2] Sales data for Columbia County were suppressed by USDA to protect confidentiality, so these totals do not include sales from that county.

[3] In addition, three Columbia County farmers raised wheat, but their acreage and production totals were suppressed by USDA in an effort to protect confidentiality.

[4] This total does not include sales from Columbia County, which were suppressed by USDA to protect confidentiality.

443,678 bushels of oats on 5,839 acres. This is 41% of Oregon's oat-producing farms. 21 farms in the region produced barley and 10 farms raised corn.[5]

Cattle and Dairy

In 2007, 2,796 farms in the Portland region held an inventory of 63,252 cattle and calves. 2,224 farms sold 29,504 of these cattle for $20 million. 74 farms sold more than $34 million of milk or dairy products.[6] 2,296 farms produced 155,947 dry tons of forage crops (hay, etc.) on 64,080 acres of cropland. Of these, 1,693 farms sold $86 million of forage.[7] In addition, 53 farms produced 76,359 tons of corn silage on 3,394 acres.[8]

Other Livestock and Animal Products

In 2007, 1,104 farms in the Portland region raised laying hens and 777 farms sold $59 million of poultry and eggs.[9] The region has 117 broiler chicken producers with a total inventory of more than 10.9 million birds. Of these, 3.2 million were held in Clackamas County, 7.7 million in Yamhill County, 360 in Columbia County and 300 in Multnomah County.[10]

596 farms sold more than $5 million of horses.[11] 261 farms hold an inventory of 7,263 hogs and pigs and 313 farms sold $1.8 million of hogs and pigs. 650 farms held an inventory of 11,517 sheep, lambs, and goats and sold $932,000 worth.[12]

Nursery, Landscape and Ornamental Crops

In 2007, 1,278 farms sold $608 million of ornamental and nursery crops, by far the highest-ranking product sold by the region's farms. There was a 17 percent decrease in the number of farms, but a 19 percent increase in sales over 2002.[13] 770 farms sold more than $54 million of Christmas trees.[14]

Direct and Organic Sales

In 2007, 1,796 farms in the Portland region sold $12 million of food directly to consumers. This is a 10 percent decrease in the number of farms selling direct (1,999 in 2002) and a 117 percent increase in direct sales ($5.7 million in 2002). Direct sales account for 1.2 percent of the region's farm sales, three times the national average. Farmers in the region make up 29 percent of the farms selling direct and account for 22 percent of Oregon's direct sales ($56 million of direct sales in Oregon in 2007 and $21 million in 2002). Multnomah County farms led the region in direct sales with $4.8 million, an increase of 388% over direct sales in 2002. 249 farms in the region sold organic foods ($21 million of sales) from 6,549 acres. This is 28 percent of Oregon farms (799) selling organic representing 24 percent of state sales ($88 million). 74

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[5] Acreage and production data for Columbia and Multnomah Counties was suppressed by USDA in an effort to protect confidentiality.

[6] Sales data for Columbia and Multnomah Counties were suppressed by USDA to protect confidentiality, so these totals do not include sales from these counties.

[7] Sales data for Columbia County were suppressed by USDA to protect confidentiality, so these totals do not include sales from that county.

[8] Four Columbia County farmers also raised corn for silage, but their acreage and production totals were suppressed by USDA in an effort to protect confidentiality.

[9] Inventory data for Clackamas County was suppressed by USDA in an effort to protect confidentiality.

[10] Inventory data for Washington County farms were suppressed by USDA in an effort to protect confidentiality.

[11] Sales data for Columbia County were suppressed by USDA in an effort to protect confidentiality.

[12] Sales Yamhill County were suppressed by USDA in an effort to protect confidentiality.

[13] Note that sales data from the 32 farms in Columbia County selling nursery crops were suppressed by USDA in an effort to protect confidentiality, so these sales are not included in this total.

[14] Sales data from the 42 farms in Columbia County selling Christmas trees were suppressed by USDA in an effort to protect confidentiality.

farms market through community supported agriculture (CSA) and 697 farms produce added-value products on the farm.

Income

Portland region farmers sell $799 million of products per year (1969-2009 average), spending $740 million to raise them, for an average gain of $59 million each year.[15] In nine of the past forty-one years the farm sector experienced a negative cash flow from raising products (though clearly some individual farms made money).[16] Overall, farm producers have enjoyed gains of $2.5 billion since 1969. However, 66 percent of the region's farms and ranches reported a net loss in 2007.[17]

Portland area farmers and ranchers earned $203 million less by selling products in 1969 than they earned in 2009 (in 2009 dollars). During this time, many livestock producers abandoned farming as a result of low margins. Sales of livestock and related products fell 56 percent, from $249 million in 1969 to $112 million in 2009, while crop income rose 131 percent from $373 million to $862 million. The most steadily increasing cost of production is hired labor, at a cost of $443 million in 2009.

Farmers and ranchers earn another $72 million per year of farm-related income — primarily rental income for land and insurance payments (41-year average for 1969-2009). Federal farm support payments averaged $8 million per year for the region over the same years. Many farm families rely deeply on off-farm income.

Crop income rose 131% from $373 million in 1969 to $862 million in 2009 (2009 dollars). The most steadily increasing cost of production is hired labor, at a cost of $443 million in 2009. Portland region farmers spent an estimated $475 million in 2007 buying inputs that were sourced outside the region. This creates a significant flow of money away from the region.

Expenses

Farm production expenses totaled more than $739 million in 2007 as shown in Table 10. Hired labor makes up more than one third of farm expenses at $301 million, followed by supply purchases ($77 million), feed purchases ($62 million) and depreciation ($62 million).

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[15] Bureau of Economic Analysis

[16] Bureau of Economic Analysis farm income data differ from Agriculture Census data. For Metro Portland, BEA farm income data is lower, while expense figures are also lower, for an overall lower net income. For one thing, BEA data ends in 2009, while USDA data are from 2007. BEA says the major difference between USDA and BEA data sets is that BEA data offer a fuller accounting of depreciation costs, in line with international standards. BEA also says it hopes to update its computer model.

[17] 2007 Agricultural Census

Table 10. Farm Production Expenses, 2007

Expense	Cost
Hired Labor	$301 million
Supply Purchases	$77 million
Feed Purchases	$62 million
Depreciation	$62 million
Seed Purchases*	$52 million+
Fertilizer	$41 million
Contracted Labor	$40 million
Loan Interest	$37 million
Pesticides	$34 million
Gasoline/Fuel/Oil*	$33 million+
Total	**$739 million+**

*Seed purchase and gas/fuel/oil data from Columbia County were suppressed by USDA to protect confidentiality.

Processing and Distribution

The Oregon food processing and distribution sector includes 197 companies not including final food preparation at retail supermarkets or other food-related businesses downstream of the initial food processors.[18] In addition to food processing, the expanded food cluster also includes farm production, packaging and machinery, transportation and warehousing. The sector generates $6.1 billion in added value and directly employs more than 23,000 workers (2006).[19]

Processing

There is no comprehensive study of food processing available for the Portland region. As discussed earlier, five processing sectors make up $7.6 billion or 62.3 percent of processing sales: frozen food manufacturing; dairy; fruit and vegetable canning, pickling, and drying; breweries, wineries, and distilleries; and bakery goods, pasta, and tortilla manufacturing.

In 2009, processing comprised the largest portion of direct agricultural sales in Oregon, with an output of more than $12 billion. The processing sector employed 31,308 people and contributed more than $2 billion in value added expenditures. This sector has an even broader impact on Oregon's economy when looking at direct and indirect expenditures, accounting for more than $20 billion in sales, employing approximately 98,000 people and contributing nearly $7 billion in value added expenditures.

In the Portland region food sector, food manufacturing generates $500 million in personal income, while retail food workers earn about $670 million, and dining service workers earn $1.6 billion. Estimated change in net assets for all households in the region was a combined loss of $9.4 billion in 2009 alone, after several consecutive years of losses (BLS).[20]

Distribution

No existing data source is known that accurately measures internal and external regional food supplies. The minimum level of internal supply can be considered to be direct farmer-to-consumer sales, which is still not totally accurate since direct sales may be distant sales through the internet, or farm-stand sales

[18] Includes companies of at least 20 employees or estimated annual sales of $1 million or more.

[19] Oregon Business Plan (www.oregonbusinessplan.org)

[20] This total was calculated by multiplying the average household change in net assets (reported in surveys of consumers by the Bureau of Labor Statistics Consumer Expenditure survey) by the number of households in the region.

outside of the region. All the same, this is a fairly reliable tally that sets a rough minimum of internal food trade: 1.5 percent of farm sales, and 0.25 percent of the region's consumer market.

Other foods that are not sold directly from farms to consumers are still locally traded, for example, milk sold by Portland region farms to processors in the region who sell that milk inside the region, or meats that are raised, processed, and consumed within the region, and so forth. The difficulty in measuring such items is that once a gallon of milk, for example, enters a processing plant tank, it can no longer be differentiated from other milk in the tank. It cannot be considered a truly local product unless the creamery sells only its products to local consumers. While this may happen to a considerable extent in the Portland area, such milk (or meat or produce) is inherently a commodity that may be traded anywhere.

Similarly, a gallon of milk may be processed in the region, but the farm where it was produced may be distant. A consumer that buys such a gallon of milk has no assurance unless the dairy has committed itself to only sourcing milk from local cows. Many "local" dairies are forced to supplement their milk supply from distant states to keep their plants fully productive as local supplies cycle through strong or lean times.

This study uses a cautious estimate that roughly 90% of the food eaten in the region is sourced outside of the region. This estimate is based upon the experiences of other states, and upon interviews with local purveyors. The most ambitious estimates of local consumption come from Vermont, a state that, like Oregon, has created considerable focus on local foods. Estimates from practitioners in Vermont range from 3% to 8% of food consumed in the state being sourced from local farms. As a first estimate until more detailed work can be accomplished, then 90 percent seems like a useful baseline. Most consumers, even in a state that has a long history of attention to local foods, still buy at stores such as Wal-Mart that are only beginning to source locally. Nor do farmers always gain significant income from such trades that are made through large-scale infrastructure.

Many local food buyers have made even more discriminating choices. Lewis and Clark College, for example, uses a food vendor that buys products from local farmers, supporting sustainable farming practices that keep profits with local growers that can be reinvested into the community. Indeed, the directness of the purchase may be far more significant than food miles as a measure of a strong community-based food economy.

Consumption

The 1.8 million residents of the Portland region received $72 billion of income in 2009. Real personal income has increased more than three-fold since 1969, in part based upon a near-doubling of population. Food consumption has consequently increased, as has the retail price of food — yet farm income has declined.

Portland region residents purchase $4.8 billion of food each year; $2.8 billion to eat at home.[21] Most of this food, an estimated $4.3 billion, is sourced outside of the region. $12 million of food products (1.5 percent of farm cash receipts, and 0.25 percent of local consumer needs) are sold by 1,796 Portland region farmers directly to consumers, but not always to Portland region consumers, since these may include internet sales.

[21] This total was calculated by multiplying the average household expenditure on food (reported in surveys of consumers by the Bureau of Labor Statistics Consumer Expenditure survey) by the number of households in the region.

442,229 residents (26%) earn less than 185 percent of the federal poverty guideline. At this level of income, children qualify for free or reduced-price lunch at school. Thus, in a farm region, more than one out of every four people has uncertainty about their ability to purchase essential foods. These lower-income residents constitute a significant market spending $900 million each year buying food, including $359 million of SNAP benefits (formerly known as food stamps) and additional millions of WIC coupons.

Food-Related Health Conditions (2009)

Approximately 24 percent of Portland region residents reported in 2009 that they eat five or more servings of fruit or vegetables each day. 76% do not. This is a key indicator of health, since proper fruit and vegetable consumption has been connected to better health outcomes. 55 percent of the region's adults report they engage in at least 30 minutes of moderate physical activity five or more days per week, or vigorous physical activity for 20 or more minutes three or more days per week. 60 percent of the region's residents are overweight (36%) or obese (24%) and 7% of the region's residents have been diagnosed with diabetes.[22] Medical costs for treating diabetes and related conditions in the metro region are estimated at $1 billion per year.[23]

Food Consumption in the Portland Region and Selected Areas[24]

Portland region residents purchase $4.8 billion of food each year; $2.8 billion to eat at home. Home purchases break down in the following way: If regional consumers purchased only 15 percent of the food they need for home use directly from farmers in the metro region, without an intermediary, this would produce $417 million of new farm income in the region — an amount equivalent to half of the 2007 farm sales in the region.

Tables 11 through 16 illustrate current food eaten at home and possible target markets for the region and its counties.

Table 11. Portland Region: Markets for Food Eaten at Home (2009)

Food	$ Millions
Meats, poultry, fish, and eggs	605
Fruits & vegetables	512
Cereals and bakery products	357
Dairy products	299
Other, including sweets, fats, & oils	1,011

Clackamas County residents purchase $1 billion of food each year; $598 million to eat at home. Home purchases break down in the following way:

[22] Source: Centers for Disease Control.

[23] Source: American Diabetes Association medical cost calculator.

[24] Source: Bureau of Labor Statistics.

Table 12. Clackamas County: Markets for Food Eaten at Home (2009)

Food	$ Millions
Meats, poultry, fish, and eggs	130
Fruits & vegetables	110
Cereals and bakery products	77
Dairy products	64
Other, including sweets, fats, & oils	217

Columbia County residents purchase $132 million of food each year; $77 million to eat at home. Home purchases break down in the following way:

Table 13. Columbia County: Markets for Food Eaten at Home (2009)

Food	$ Millions
Meats, poultry, fish, and eggs	17
Fruits & vegetables	14
Cereals and bakery products	10
Dairy products	8
Other, including sweets, fats, & oils	28

Multnomah County residents purchase $1.9 billion of food each year; $1.1 billion to eat at home. Home purchases break down in the following way:

Table 14. Multnomah County: Markets for Food Eaten at Home (2009)

Food	$ Millions
Meats, poultry, fish, and eggs	245
Fruits & vegetables	207
Cereals and bakery products	144
Dairy products	121
Other, including sweets, fats, & oils	408

Washington County residents purchase $1.4 billion of food each year; $831 million to eat at home. Home purchases break down in the following way:

Table 15. Washington County: Markets for Food Eaten at Home (2009)

Food	$ Millions
Meats, poultry, fish, and eggs	181
Fruits & vegetables	153
Cereals and bakery products	107
Dairy products	89
Other, including sweets, fats, & oils	302

Yamhill County residents purchase $263 million of food each year; $153 million to eat at home. Home purchases break down in the following way:

Table 16. Yamhill County: markets for food eaten at home (2009)

Food	$ Millions
Meats, poultry, fish, and eggs	33
Fruits & vegetables	28
Cereals and bakery products	20
Dairy products	16
Other, including sweets, fats, & oils	56

Conclusions and Opportunities

Farmers gain $59 million each year producing food products, spending $475 million buying inputs sourced outside the region, for a total outflow of $416 million from the region's economy. Meanwhile, consumers spend more than $4.3 billion buying food sourced outside the Portland region. Thus, total loss to the region is $4.7 billion of potential wealth *each year*. This loss amounts to nearly five times the value of all farm products now raised in the region. The amount of food imported to the region is greater than the entire food production of the State of Oregon.

The most important dynamic to be addressed with regard to farming in the Portland metro area is the extent to which farmers currently do not produce primary foods for consumers to eat. The overwhelming majority of the region's farm sales ($662 million) are devoted to grass, sod, grass seed, Christmas trees, and ornamental plants. Another $300 million of sales is devoted to the care and feeding of animals that are destined for manufacturers (essentially these animals are raw materials for industrial processing), with no assurance that the products derived from them will meet local consumer needs.

The Portland region produces large quantities of fruits, nuts, and vegetables, which typically are exported as commodities in bulk. Only a small fraction is sold locally. While it may seem like a simple matter to divert the sales of, for example, pears or apples from distant markets to local consumers, this is not as simple as it seems because a well-entrenched infrastructure ensures that exports are favored and local distribution channels may be very small or financially weak. Moreover, the local market may be too small and too scattered to wholly attract the attention of local export-based growers.

The concept of exporting food products is widely understood and practiced. At least 90 percent of food crops currently produced in the region are exported. An additional strategy is import-substitution where actions are taken to substitute local products and services for those currently imported. Both exporting and import-substitution are valid strategies. Import-substitution is not a widely practiced economic development strategy, but seems to have great potential given the size and nature of food imports into the Portland region.

PSU graduate student Mike Mertens, in conducting a study of potential for food production in Clackamas County, Oregon, found that there is significant opportunity to grow a variety if types of local food to substitute for a large portion of currently imported food crops, especially fruits and vegetables. He plans to explore the economic opportunities for localizing a portion of the regional food system in future work.

Early adaptors who focus on import-substitution often begin with high-value products that can be stored easily, since perishable items may spoil. Thus, frozen meats, bottled milk and storable dairy products or high value fruits and vegetables with some shelf-life are typically the first ones to be offered. These foods have often been purchased first by people of high incomes while low-income consumers feel they have little access to these quality foods.

Crops with longer shelf-lives, such as root vegetables and those that cannot be shipped, such as local cane berries and strawberries may find larger regional markets. In addition, because of the relatively large food processing industry in the state there may be opportunities to expand processed products for distribution locally and for export.

One recent trend is exhibited by the growers in the Willamette Valley who have begun to shift away from grass seed production (often as suburban housing starts fell, decimating landscaping markets) toward edible beans and wheat. Farmers hope this wheat will be milled locally, but few local mills exist. Nevertheless, this is a significant break from farm production that is deeply dependent on housing starts and one that ultimately threatens the very near-urban regional base on which farmer's farm, since new housing is often built on urban growth boundary expansions on farm lands.

Data on limited resource growers and production (small farms) shows that farms of all sizes may make important contributions. Small farms may be far more productive per acre (there are farms across the U.S. selling for as much as $100,000 per acre),[25] and are definitely more capable of responding flexibly to changing circumstances, such as rising oil prices, or changes in climate, than larger farms that are more locked into high cost energy consumption, commodity crops and less-flexible production systems.

Yet small farms also have significant limitations. Without co-operative equipment, transportation, processing and distribution schemes, small farms will have little market power and are unlikely to produce enough food for the regional population. Large farms may require years to ramp up from smaller operations, but they promise more stable and diverse production over longer periods of time. An ideal food system would foster both small and large farms and would find ways where larger farms will use their size to create benefits for the small, such as participating in joint distribution or purchasing inputs co-operatively, rather than forcing small farms into competition.

Key changes will also need to be made if the Portland region is to have more self-reliant farms. Season extension through solar-heated greenhouses, inexpensive hoop houses (high tunnels) or cold frames will be essential to increase productivity. Increasing the efficiency of transportation from farmer to consumer will be critical as oil prices escalate. Diversifying cropping and livestock production and making more use of crop rotation and both animal and green manures, will help build soil fertility and reduce runoff. Fueling a food system on green energy (biofuels, solar, wind and ground source thermal energy) may provide a competitive advantage relative to export-based agriculture as oil supplies wane.

There are two key elements to the food system of the future than cannot be addressed solely at the farm level. First, the essential component of a strong Portland regional food system will be infrastructure that creates local food trade efficiencies. Our current incentive system, including tax credits and public investment, has favored long-distance transport of food and other commercial items. If we apply similar incentives to promote the growth of regional food systems, through neighborhood and county food storage areas, root cellars, community kitchens for small-scale processing and human-powered distribution networks, farms of many sizes may thrive. The key public investment appears to create this supportive infrastructure.

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[25] Based on farm interviews with producers across the nation, some of whom are reluctant to have their names publicized. One Georgia farm reports sales of $100,000 per acre, but does not wish to be identified (interview with farm manager). The STOGROW student-run farm at St. Olaf College reported sales of $25,000 on a one-quarter acre farm in an interview with the former farm manager. Growing Power in Milwaukee claims sales of $200,000 per acre (personal communication from staff). Greensgrow Gardens in Philadelphia sells $900,000 of products from a one-acre farm in Central City Philadelphia, but much of these sales are brokered from nearby nurseries and produce farms.

Second, policy should help create clusters of businesses that develop mutual dependency. For example, the Columbus, Ohio ice cream maker, Jeni's Splendid Ice Creams, refuses to expand production unless their milk supplier, Snowville Creamery, has sufficient capacity to expand in kind. Oregon has long been a leader in fostering collaborative networks and could be a national leader in fostering such business clusters.

A final need of the regional food system is long-term sustainability and resiliency. To achieve sustainability the regional food system should support the Triple Bottom Line (Ecology, Community, and Economy). Farms that do business from the Triple Bottom Line will create mutual trust and respect within the region. New technology can serve as the servant of these social, economic and ecological purposes. Regional investment funds will be required to ensure that local visions can be backed with solid commitments of capital and ensure that interest payments will recycle back into the Portland region to continue meeting local challenges.

Appendix A
Agriculture Census 2007: County Highlights

Clackamas County

- 3,989 farms, a 15% decrease since 2002.
- 182,743 acres in farms, a decrease of 15% since 2002.
- $397 million of products sold by farms, an increase of 20% over 2002.
- Crop sales totaled $335 million (84% of sales).
- Livestock sales totaled $62 million (16% of sales).
- Government payments to farmers totaled $222,000, a decrease of 26% since 2002.
- The most prevalent farm size (by acres) is farms of 10-49 acres, with 1,770 (44% of all farms).
- Next most prevalent farm size was 1-9 acres, with 1,506 farms.
- Clackamas County ranks second in Oregon for sales of farm products.
- The county also ranks second in the state for sales of crops.
- Ranks first in Oregon, and first in U.S., for sales of Christmas trees, with $47 million.
- Ranks first in the state for acreage of Christmas trees, with 23,295.
- Ranks 1st in Oregon for acreage of nursery stock, with 12,859.
- Ranks first in Oregon for sales of poultry and eggs, with $41 million.
- Ranks 1st in the state for inventory of laying hens.
- Ranks first in Oregon for inventory of pullets to produce laying hen stock.
- Ranks 1st in Oregon for sales of horses, with $2.3 million.
- Ranks 2nd in the state for sales of hogs and pigs, with $994,000.
- Ranks 4th in the state for inventory of mink.
- Ranks 4th in Oregon for acres devoted to hazelnuts.
- Ranks sixth in Oregon for sales of vegetables, with $19 million.
- Ranks 7th in the state for sales of fruits, nuts, and berries, with $28 million.
- Ranks 9th in Oregon for aquaculture sales, with $516,000.
- Cattle and calf sales totaled $8 million.
- The most prevalent farm size (by sales) is farms selling less than $1,000, with 1,242 (31% of the county's farms).

Columbia County

- 805 farms, n 8% decrease since 2002.
- 57,758 acres in farms, a decrease of 7% since 2002.
- Sales of farm products for county farms were not released by USDA in an effort to protect confidentiality. Total farm product sales had been $28.7 million in 2002.
- Columbia County ranks 26th in Oregon for farm product sales.
- The county ranks second in Oregon, and fourth in the U.S., for acreage devoted to short-rotation woody crops (shrubs and other nursery items).
- Government payments to farmers totaled $181,000, an increase of 52% over 2002.
- The most prevalent farm size (by acres) is farms of 10-49 acres, with 396 (nearly half of all farms).
- Columbia County ranks 3rd in Oregon for inventory of rabbits, with 3,630.
- Ranks 6th in state for inventory of laying hens, with 5,944.
- County farms and ranches hold an inventory of 10,679 cattle and calves.

- Ranks 7th in Oregon for sales of nursery and ornamental crops, but sales were not reported by USDA.
- Ranks 9th in Oregon for acres of nursery stock.
- Ranks 10th in state for sales of, and acreage devoted to, Christmas trees.
- The most prevalent farm size (by sales) is farms selling less than $1,000, with 245 (30% of the county's farms).

Marion County

- 2,670 farms, a 17% increase since 2002.
- 307,647 acres in farms, a decrease of 10% since 2002.
- $587 million of products sold by farms, an increase of 36% over 2002.
- Crop sales totaled $485 million (83% of sales).
- Livestock sales totaled $102 million (17% of sales).
- Government payments to farmers totaled $1.0 million, an increase of 15% over 2002.
- The most prevalent farm size (by acres) is farms of 10-49 acres, with 1,031 (39% of all farms).
- Marion County is the largest farm producer in the state of Oregon, ranked by sales.
- The County is also ranks 22nd in the U.S. for sales of crops.
- Marion County ranks fourth in Oregon for sales of livestock and related products.
- Ranks 1st in Oregon, and 7th in the U.S., for sales of nursery and ornamental crops, with $244 million in sales (42% of county farm products sales).
- Ranks first in the state for sales of hogs and pigs, with $1.6 million.
- Ranks first in Oregon, and 3rd nationally, for sales of mink and their pelts.
- Ranks 2nd in the state, and 6th in the U.S., for sales of forage crops, with $117 million.
- Ranks 2nd in Oregon, and 3rd in the U.S., for sales of Christmas trees, with $20 million.
- Ranks second in the state, and second in the nation, for acreage devotes to grass seed.
- Ranks 2nd in Oregon for acreage devoted to vegetables, with 25,012.
- Ranks 2nd in the state, and 2nd in the U.S., for acreage devoted to Christmas trees, with 13,794.
- Ranks second in Oregon, and third in the U.S., for acres of nursery stock, with 11,531.
- Ranks 2nd in the state for sales of poultry and eggs, with $28 million.
- Ranks second in Oregon for inventory of laying hens.
- Ranks 2nd in the state for inventory of pullets to produce laying hen stock.
- Ranks 3rd in Oregon for sales of fruits, nuts, and berries, with $57 million.
- Ranks 3rd in the state for sales of milk and dairy products, with $57 million.
- Ranks 4th in Oregon for inventory of broiler chickens, with 523,501.
- Ranks fourth in the state for sales of vegetables, with $43 million.
- Ranks 9th in Oregon for sales of horses, with $677,000.
- The most prevalent farm size (by sales) is farms selling less than $1,000, with 750 (28% of the county's farms).

Multnomah County

- 563 farms, a 21% decrease since 2002.
- 28,506 acres in farms, a decrease of 17% since 2002.
- $84 million of products sold by farms, an increase of 25% over 2002.
- Crop sales totaled $82 million (97% of sales).
- Livestock sales totaled $2 million (3% of sales).

- Government payments to farmers totaled $227,000, an increase of 285% over 2002.
- The most prevalent farm size was farms of 10-49 acres, with 240 (43% of all farms).
- Ranks 4th in Oregon and 11th in U.S. for acreage of nursery stock, with 4,127.
- Ranks 5th in state for sales of nursery and ornamental crops, with $60 million.
- Ranks sixth in state for land in berries, with 1,178 acres.
- Ranks 8th in Oregon for sales of vegetables, with $12 million.
- Cattle and calf sales totaled $852,000.
- Hog sales totaled $11,000.
- The most prevalent farm size (by sales) is farms selling less than $1,000, with 122 (22% of the county's farms).

Washington County

- 1,761 farms, a 7% decrease since 2002.
- 127,984 acres in farms, a decrease of 2% since 2002.
- $311 million of products sold by farms, an increase of 34% over 2002.
- Crop sales totaled $295 million (95% of sales).
- Livestock sales totaled $16 million (5% of sales).
- Government payments to farmers totaled $809,000, a decrease of 26% from 2002.
- The most prevalent farm size was 10-49 acres, with 716 (41% of all farms).
- Washington County ranks 5th in Oregon for sales of farm products.
- The county ranks 3rd in the state for crop sales.
- Ranks 3rd in Oregon, and 12th in the U.S., for sales of nursery and ornamental crops, with $199 million.
- Ranks 3rd in Oregon, and 3rd in the U.S., for acreage devoted to hazelnuts, with 5,608.
- Ranks third in the state, and 6th in the nation, for acreage of nursery stock, with 5,106.
- Ranks 4th in Oregon for sales of fruits and nuts, with $53 million.
- Ranks fourth in the state for sales of hogs and pigs, with $466,000.
- Ranks 5th in Oregon for sales of horses, with $989,000.
- Ranks 7th in state, and 8th in the U.S., for acreage devoted to grass seed, with 30,411.
- Ranks 7th in Oregon for inventory of broiler hens.
- Ranks 8th in Oregon for acres of wheat, with 9,752.
- Ranks eighth in Oregon for sales of grains, with $8 million.
- Ranks eighth in state for inventory of pheasants.
- Ranks 8th in state for sales of Christmas trees, with $3.2 million of sales.
- Ranks eighth in Oregon for sales of poultry and eggs, with $588,000.
- Ranks 9th in state for inventory of laying hens, with 4,821.
- Sales of forage crops totaled $25 million.
- Sales of milk and dairy products totaled $7 million.
- Vegetable sales totaled $7 million.
- The most prevalent farm size (by sales) was farms selling less than $1,000, with 487 (28% of the county's farms).

Yamhill County

- 2,115 farms, a 9% decrease since 2002.
- 180,846 acres in farms, a decrease of 8% since 2002.

- $278 million of products sold by farms, an increase of 33% over 2002.
- Crop sales totaled $230 million (83% of sales).
- Livestock sales totaled $47 million (17% of sales).
- Government payments to farmers totaled $1.8 million, an increase of 76% over 2002.
- The most prevalent farm size was farms of 10-49 acres, with 1,012 (48% of all farms).
- 31 farms worked more than 1,000 acres.
- Yamhill County ranks 7th in Oregon for sales of farm products.
- Ranks 1st in state for inventory of broiler hens, with 1.3 million.
- Yamhill County ranks first in the U.S. for acreage of hazelnuts, with 7,574.
- Ranks 1st in state for acreage of grapes, with 5,888.
- Ranks 3rd in Oregon for sales of poultry and eggs, with $17 million.
- Ranks third in state for sales of horses, with $1.5 million.
- Ranks 4th in state, and 5th in U.S., for acreage of grass seed, with 49,684.
- Ranks fourth in Oregon for sales of nursery and ornamental crops, with $121 million (43% of sales).
- Ranks fourth in state for sales of forage crops, with $45 million.
- Ranks fifth in Oregon for sales of fruits and nuts, with $51 million.
- Ranks 5th in Oregon for sales of milk and dairy products, with $21 million.
- Ranks 6th in state for sales of hogs and pigs, with $303,000.
- Ranks 7th in Oregon for sales of Christmas trees, with $3.3 million.
- Ranks 8th in state for acreage of vegetables, with 4,000.
- Ranks 8th in Oregon for inventory of laying hens, with 5,037.
- The most prevalent farm size (by sales) is farms selling less than $1,000, with 622 (29% of the county's farms).

Clark County, Washington

- 2,101 farms, a 32% increase since 2002.
- 78,359 acres in farms, an increase of 11% since 2002.
- $53 million of products sold by farms, a decrease of 3% over 2002.
- Crop sales totaled $22 million (42% of sales).
- Livestock sales totaled $31 million (58% of sales).
- Government payments to farmers totaled $115,000, a decrease of 44% since 2002.
- The most prevalent farm size was farms of 10-49 acres, with 1,043 (50% of all farms).
- Next most prevalent farm size was 1-9 acres, with 705.
- 12 farms had more than 500 acres.
- Clark County farms ranked first in Washington State for the inventory of rabbits.
- Ranks 2nd in Washington State for acreage devoted to Christmas trees, with 1,176.
- Ranks 3rd in the state for sales of Christmas trees, with $3 million.
- Ranks 3rd in Washington State for sales of sheep and goats, with $342,000.
- Ranks fourth in state for acreage of berries, with 1,335.
- Ranks eighth in Washington State for sales of poultry and eggs, with $10.6 million.
- Ranks 9th in state for acreage planted to corn for silage, with 1,883 acres.
- Ranks 9th in state for acreage of oats, with 405.
- Ranks 10th in Washington State for sales of horses, with $917,000.

- 1,793 (85%) farms sold less than $10,000 of products.
- 53 farms sold more than $100,000 of products.

Appendix B
State of Oregon Agricultural Data

Agriculture Census 2007: Oregon Highlights

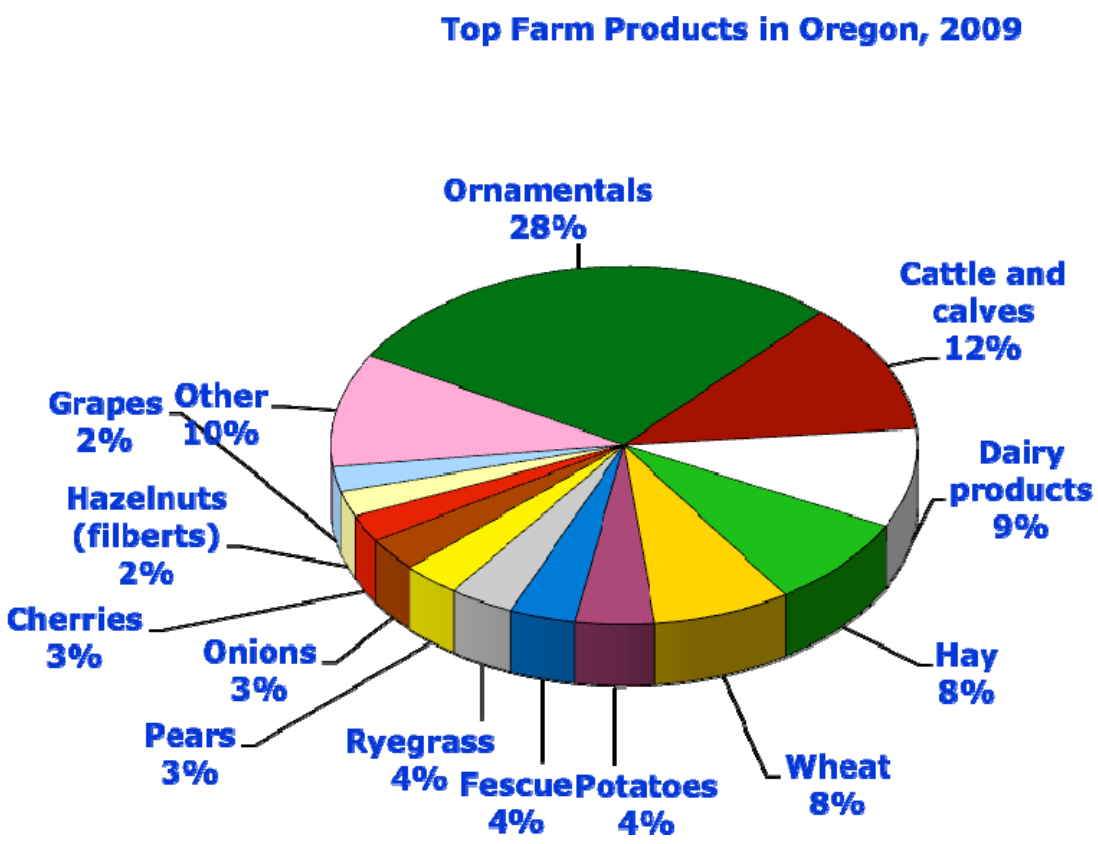
- Ranks first in the nation in sales of Christmas trees, with $117 million of sales.
- Ranks 1st in U.S. for acreage devoted to Christmas trees, with 66,816.
- Ranks 1st in nation for acreage devoted to grass and sod, with 557,000 acres.
- Ranks 3rd in U.S. for sales of nursery and ornamental crops, with $989 million.
- Ranks 3rd in nation for sales of forage crops, with $698 million.
- Ranks 4th in U.S. for sales of fruits and nuts, with $516 million.
- Ranks 9th in nation for sales of sheep and goats with $21 million.
- Ranks 9th in U.S. for acreage devoted to vegetables, with 149,665.
- Ranks 10th in U.S. for sales of vegetables, with $339 million.
- Oregon had 38,553 farms in 2007, slightly less than its 40,033 farms in 2002.
- Total sales of farm products totaled $4.4 billion, a 37% increase over 2002.
- $3.0 billion of farm sales (68%) came from selling crops.
- $1.4 billion of farm sales (32%) came from selling livestock and products.
- Government payments increased 47% over 2002 levels, to $76 million.
- The most prevalent farm size was 10-49 acres, with 14,000 farms.
- The next most prevalent farm size was 1-9 acres, with 9,600.
- The third most prevalent farm size was 50-179 acres, with 7,500 farms.
- 2,500 farms managed more than 1,000 acres.
- 11,763 farms sell less than $1,000 of products.
- 4,678 farms sell more than $100,000 of products.
- After subsidies are taken into account, 65% of Oregon farms reported to the Agriculture Census that their operation suffered a net loss in 2007.
- 6,274 state farms earned $56 million selling products directly to consumers. This is a 2% decrease in the number of farms, and a 163% increase in direct sales.
- Direct food sales from farms accounted for more value than the state's 14th-largest product, chicken eggs.
- 933 farms devoted 92,405 acres to organic production. This included 45,834 acres of harvested cropland, 41,844 acres of pastureland, and 16,175 acres on 470 farms undergoing organic conversion.
- 799 of these organic farms sold $88 million of organic products, including $42 million of crops (this may include ornamental and greenhouse crops), $3 million of livestock and poultry, and $43 million of products from livestock and poultry (such as milk or eggs).
- 3,799 farms receive irrigation water from the U.S. Bureau of Reclamation.
- 311 farms market through community supported agriculture (CSA).
- 2,807 state farms produce value-added products.
- 9,327 farms use conservation methods.
- 9,694 farms practice rotational management or intensive grazing.
- 631 farms generate energy or electricity on the farm.

Top Oregon Farm Products, 2009 (Economic Research Service)

At $56 million, direct sales from farmers to consumers amounts to more value than sales of the 14th-ranked product, chicken eggs.

Rank	Product	Sales ($ millions)
1	Greenhouse/nursery	972.1
2	Cattle and calves	405.7
3	Dairy products	305.1
4	Hay	282.9
5	Wheat	259.7
6	Potatoes	149.3
7	Fescue	123.6
8	Ryegrass	122.9
9	Pears	107.3
10	Onions	104.0
11	Cherries	83.7
12	Hazelnuts (filberts)	79.4
13	Grapes	76.8
14	Chicken eggs	47.2
15	Hops	43.2
16	Mint	43.0
17	Blueberries	37.9
18	Corn, sweet	37.6
19	Blackberry group	32.9
20	Apples	26.5
21	Beans, snap	24.3
22	Corn	23.3
23	Bluegrass, kentucky	19.9
24	Sugar beets	16.6
Total		**3,387.3**

Broiler hens were also listed among Oregon's top 25 products, but sales figures for these products were not released by ERS to protect confidentiality.



Source: USDA Economic Research Service

Farm Types in Oregon (2007 Census of Agriculture)
Only 14 percent of farms in Oregon (5,293 of 38,553) are considered farms of considerable means, according to the Census of Agriculture's typology (this includes farms marked as "higher sales," large family farms, very large family farms, or non-family farms, below). USDA reports this data for the state as a whole, but not for individual counties in the study area.

Farm Types by Category, State of Oregon

Farm Type	Number	Percent
Limited resource farms	5,503	14%
Retirement farms	9,126	24%
Residential/lifestyle farms	13,807	36%
Farm occupation/lower sales	4,824	13%
Farm occupation/higher sales	1,181	3%
Large family farms	899	2%
Very large family farms	1,246	3%
Non-family farms	1,967	5%
Totals	**38,553**	**100%**

The following farm definitions are used by USDA in creating the tables in this section:

Rural residence farms. Specific typologies included in rural residence farms are limited-resource,

retirement, and residential lifestyle farms.

- Limited-resource farms. Small farms with sales less than $100,000 in 2003 and low operator household income in 2003 and 2004. Household income is low if it is less than the poverty level in both 2003 and 2004 or if it is less than half the county median income both years.
- Retirement farms. Small farms whose operators report they are retired (excludes limited-resource farms operated by retired farmers).
- Residential/lifestyle farms. Small farms whose operators report they had a major occupation other than farming (excludes limited-resource farms with operators reporting a non-farm major occupation).

Intermediate farms. Includes farming occupation/lower-sales and farming occupation/higher-sales farms.

- Farming occupation/low-sales. Small farms with sales less than $100,000 whose operators report farming as their major occupation (excludes limited-resource farms whose operators report farming as their major occupation).
- Farming occupation/high-sales. Small farms with sales between $100,000 and $249,999 whose operators report farming as their major occupation.

Commercial farms. Includes large, very large, and nonfamily farms.

- Large family farms. Farms with sales between $250,000 and $499,999.
- Very large family farms. Farms with sales of $500,000 or more.
- Nonfamily farms. Farms organized as non-family corporations or cooperatives, as well as farms operated by hired managers.

The data shows that only 109 farms in the state are owned and operated by a farmer under 25 years of age, while 29 percent of Oregon farms are operated by someone over 65 years.

Farm Types by Age of Owner, State of Oregon

	Under 25	25 to 34	35 to 44	45 to 54	55 to 64	65 & over
Limited resource farms	27	185	512	1,322	1,615	1,842
Retirement farms	0	0	47	298	2,620	6,161
Residential/lifestyle farms	24	687	2,193	5,389	4,434	1,080
Farming occupation/lower sales	33	293	673	1,555	1,423	847
Farming occupation/higher sales	9	113	130	351	362	216
Large family farms	2	51	94	267	280	205
Very large family farms	1	60	128	416	402	239
Non-family farms	13	106	308	47	529	464
Totals	**109**	**1,495**	**4,085**	**10,145**	**11,665**	**11,054**

This categorization of farms shows that limited resource farms may sell as much as $99,000 of products, and that even lifestyle or retirement farms may sell well over $100,000. Conversely, non-family farms may sell very low amounts.

Farm Types by 2007 Sales, State of Oregon

Farm Type	All farms	Less than $1,000	$1,000 to $2,499	$2,500 to $4,999	$5,000 to $9,999	$10,000 to $24,999
Limited resource	5,503	2,081	979	786	648	554
Retirement	9,126	3,162	1,444	1,304	1,112	996
Lifestyle farms	13,807	5,034	2,654	2,004	1,554	1,284

Farms/lower sales	4,824	1,128	500	459	507	725
Farms/higher sales	1,181	-----	-----	-----	-----	-----
Large family farms	899	-----	-----	-----	-----	-----
Very large family farms	1,246	-----	-----	-----	-----	-----
Non-family farms	1,967	358	110	98	113	171
Total	**38,553**	**11,763**	**5,687**	**4,651**	**3,934**	**3,730**

Farm Type	$25,000 to $49,999	$50,000 to $99,999	$100,000 to $249,999	$250,000 to $499,999	$500,000 to $999,999	$1 million or more
Limited resource	299	156	-----	-----	-----	-----
Retirement	526	332	250	-----	-----	-----
Lifestyle farms	586	434	257	-----	-----	-----
Farms/lower sales	728	777	-----	-----	-----	-----
Farms/higher sales	-----	-----	1,181	-----	-----	-----
Large family farms	-----	-----	-----	899	-----	-----
Very large family farms	-----	-----	-----	-----	642	604
Non-family farms	133	139	251	178	178	238
Total	**2,272**	**1,838**	**1,939**	**1,077**	**820**	**842**

Note: Category names have been shortened in this chart to provide space for data entries.

Census of Agriculture data also show that limited-resource farms may be quite large and that "large" farms by sales may be very small in acreage.

Farm Type by Acreage, State of Oregon

Farm Type	1 to 9	10 to 49	50 to 69	70 to 99	100 to 139	140 to 179
Limited resource	1,576	2,242	320	308	251	181
Retirement	2,085	3,743	580	623	448	397
Lifestyle farms	4,583	5,762	723	663	471	361
Farms/lower sales	966	1,631	257	320	271	261
Farms/higher sales	49	155	65	72	47	52
Large family farms	19	61	36	54	45	32
Very large family farms	14	78	33	35	54	46
Non-family farms	254	470	117	107	112	88
Total	9,546	14,142	2,131	2,182	1,699	1,418

Farm Type	180 to 219	220 to 259	260 to 499	500 to 999	1,000 to 1,999	2,000 or more
Limited resource	99	71	208	138	48	61
Retirement	155	135	408	277	56	119
Lifestyle farms	208	121	367	277	124	147
Farms/lower sales	139	108	333	197	158	183
Farms/higher sales	51	42	198	120	102	228
Large family farms	27	19	120	158	86	242
Very large family farms	35	41	157	202	195	356
Non-family farms	82	61	155	162	129	230

Total	796	598	1,946	1,531	998	1,566

Note: Category names have been shortened in this chart to provide space for other entries.

Farms of all sizes produce all crops, including grains.

Farm Type by Crops Produced, State of Oregon

Farm Type	Grains & Oilseeds	Vegetables & Melons	Fruits & Nuts	Nursery & Ornamentals	Other Crops
Limited resource	32	132	389	527	914
Retirement	86	125	903	732	1,953
Lifestyle farms	94	196	1,178	1,207	2,404
Farms/lower sales	116	98	461	462	890
Farms/higher sales	151	32	200	148	273
Large family farms	110	36	146	92	256
Very large family farms	138	105	127	184	326
Non-family farms	84	70	362	310	401
Total	**811**	**794**	**3,766**	**3,662**	**7,417**

No large family farms produce poultry or eggs, nor do very large family farms raise hogs.

Farm Type by Livestock or Derivatives Produced, State of Oregon

Farm Type	Beef Cattle	Milk & Dairy	Hogs & Pigs	Poultry & Eggs	Sheep & Goats
Limited resource	1,757	36	57	159	412
Retirement	3,089	43	76	209	500
Lifestyle farms	4,661	65	196	369	949
Farms/lower sales	1,535	27	61	104	191
Farms/higher sales	300	29	6	1	4
Large family farms	183	42	6	-----	6
Very large family farms	160	144	-----	29	4
Non-family farms	386	46	23	20	37
Total	**12,071**	**432**	**425**	**891**	**2,103**

Cattle Feedlots and Aquaculture or Other Animals, State of Oregon

Farm Type	Cattle Feedlots	Aquaculture & Other
Limited resource	100	988
Retirement	175	1,235
Lifestyle farms	368	2,120
Farms/lower sales	79	800
Farms/higher sales	12	25
Large family farms	9	13
Very large family farms	12	17
Non-family farms	23	205
Total	**778**	**5,403**

As mentioned above, 65 percent of the farms in Oregon reported a net loss when responding to the Census of Agriculture in 2007. A more precise set of data covering the net gains and losses is shown below. Gains and losses occurred that were both large and small.

	Total
Net cash farm income (number of farms)	38,553
Net cash farm income ($1,000)	903,728
Farms with **net gains** (number)	13,455
Gain of:	
Less than $1,000	1,483
$1,000 to $4,999	2,886
$5,000 to $9,999	1,596
$10,000 to $24,999	2,175
$25,000 to $49,999	1,580
$50,000 or more	3,735
Farms with **net losses** (number of farms)	25,098
Loss of:	
Less than $1,000	2,362
$1,000 to $4,999	9,486
$5,000 to $9,999	5,142
$10,000 to $24,999	4,815
$25,000 to $49,999	1,970
$50,000 or more	1,323

This data is further analyzed by the Census of Agriculture to show net gains and losses by size of farm, measured both by the number of acres and the amount of sales. These data show, that while of course large farms earn more money overall than small ones, there are both profitable small farms, and large farms that lose money. Only the smallest farms, those from one to nine acres, showed losses for the entire category.

Looking at the net cash income by sales, however, shows some different trends. All of the categories of farms with sales less than $25,000 show an overall loss for the category. This suggests that these small farms are highly dependent on off-farm jobs, and are perhaps arranging their finances to show a net loss in an effort to reduce taxes. Surprisingly, farms with less than $10,000 of sales lost a combined total of $98 million.

Three-fourths of the net cash income earned by Oregon farms was earned by farms selling more than $1 million of products, yet losses occurred even for these largest of farms.

Farms with Net Gains and Losses by Acreage of Farm, State of Oregon

	1 to 9	**10 to 49**	**50 to 69**	**70 to 99**	**100 to 139**	**140 to 179**
Net cash farm income (farms)	9,546	14,142	2,131	2,182	1,699	1,418
Net cash farm income ($1,000)	-18,427	10,207	23,106	30,049	26,791	21,501
Farms with **net gains** (number of farms)	2,212	3,668	775	903	695	653
Gain of:						
Less than $1,000	504	622	98	80	32	43

$1,000 to $4,999	818	1117	175	163	134	141
$5,000 to $9,999	325	513	124	131	105	97
$10,000 to $24,999	318	617	146	180	145	105
$25,000 to $49,999	116	366	65	142	90	110
$50,000 or more	131	433	167	207	189	157
Farms with **net losses** (number of farms)	7,334	10,474	1,356	1,279	1,004	765
Loss of:						
Less than $1,000	903	1,017	112	94	80	37
$1,000 to $4,999	3,583	4,138	407	395	226	192
$5,000 to $9,999	1,419	2,347	312	261	215	167
$10,000 to $24,999	1,067	2,016	297	335	275	184
$25,000 to $49,999	284	679	150	127	118	118
$50,000 or more	78	277	78	67	90	67

	180 to 219	**220 to 259**	**260 to 499**	**500 to 999**	**1,000 to 1,999**	**2,000 or more**
Net cash farm income (farms)	796	598	1,946	1,531	998	1,566
Net cash farm income ($1,000)	26,046	20,495	137,029	190,647	162,887	273,397
Farms with **net gains** (number of farms)	378	285	1,112	942	711	1,121
Gain of:						
Less than $1,000	26	8	21	25	11	13
$1,000 to $4,999	39	31	141	66	34	27
$5,000 to $9,999	41	29	100	78	31	22
$10,000 to $24,999	78	71	159	152	92	112
$25,000 to $49,999	62	55	197	122	125	130
$50,000 or more	132	91	494	499	418	817
Farms with **net losses** (number of farms)	418	313	834	589	287	445
Loss of:						
Less than $1,000	19	19	52	18	8	3
$1,000 to $4,999	104	69	197	104	34	37
$5,000 to $9,999	86	50	123	87	38	37
$10,000 to $24,999	95	80	202	125	60	79
$25,000 to $49,999	67	39	130	98	62	98
$50,000 or more	47	56	130	157	85	191

Farms with Net Gains and Losses by Sales, State of Oregon

	Less than $1,000	**$1,000 to $2,499**	**$2,500 to $4,999**	**$5,000 to $9,999**	**$10,000 to $24,999**	**$25,000 to $49,999**
Net cash farm income (farms)	11,763	5,687	4,651	3,934	3,730	2,272
Net cash farm income ($1,000)	-98,108	-32,077	-25,011	-19,041	-10,470	6,846
Farms with **net gains** (number of farms)	1,064	767	1,214	1,599	2,026	1,516
Gain of:						
Less than $1,000	236	407	413	254	125	24
$1,000 to $4,999	246	227	655	902	579	160
$5,000 to $9,999	151	49	62	316	638	237
$10,000 to $24,999	197	47	49	64	577	723
$25,000 to $49,999	140	20	23	45	74	330

$50,000 or more	94	17	12	18	33	42
Farms with **net losses** (number of farms)	10,699	4,920	3,437	2,335	1,704	756
Loss of:						
Less than $1,000	797	653	493	251	118	22
$1,000 to $4,999	4,461	2,292	1,362	730	406	132
$5,000 to $9,999	2,395	999	717	524	304	125
$10,000 to $24,999	2,052	737	614	526	493	181
$25,000 to $49,999	685	186	192	222	261	165
$50,000 or more	309	53	59	82	122	131

	$50,000 to $99,999	**$100,000 to $249,999**	**$250,000 to $499,999**	**$500,000 to $999,999**	**$1,000,000 or more**
Net cash farm income (farms)	1,838	1,939	1,077	820	842
Net cash farm income ($1,000)	29,648	80,711	106,700	176,139	688,392
Farms with **net gains** (number of farms)	1,364	1,528	887	714	776
Gain of:					
Less than $1,000	13	9	-----	1	1
$1,000 to $4,999	78	36	2	1	-----
$5,000 to $9,999	78	45	12	4	4
$10,000 to $24,999	292	167	38	11	10
$25,000 to $49,999	540	289	69	39	11
$50,000 or more	363	982	766	658	750
Farms with **net losses** (number of farms)	474	411	190	106	66
Loss of:					
Less than $1,000	17	7	4	-----	-----
$1,000 to $4,999	57	39	4	1	2
$5,000 to $9,999	43	23	7	4	1
$10,000 to $24,999	98	74	24	13	3
$25,000 to $49,999	117	81	46	8	7
$50,000 or more	142	187	105	80	53

Appendix C
Key Data Sources

Bureau of Economic Analysis data on farm production balance
http://www.bea.doc.gov/bea/regional/reis/

Food consumption estimates from Bureau of Labor Statistics Consumer Expenditure Survey
http://www.bls.gov/cex/home.htm

U.S. Census of Agriculture
http://www.nass.usda.gov/census/

USDA/Economic Research Service food consumption data:
http://www.ers.usda.gov/data/foodconsumption/

USDA/ Economic Research Service farm income data:
http://ers.usda.gov/Data/FarmIncome/finfidmu.htm

Centers for Disease Control: Behavior Risk Factors Surveillance System
BRFSS http://apps.nccd.cdc.gov/brfss-smart/

National Association of County and City Health Officials (NACCHO)
Big Cities Health Inventory http://www.naccho.org/