



Agriculture and Food Processing in Washington State

Economic Impacts and Importance of Water

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1. Project Scope and Key Questions

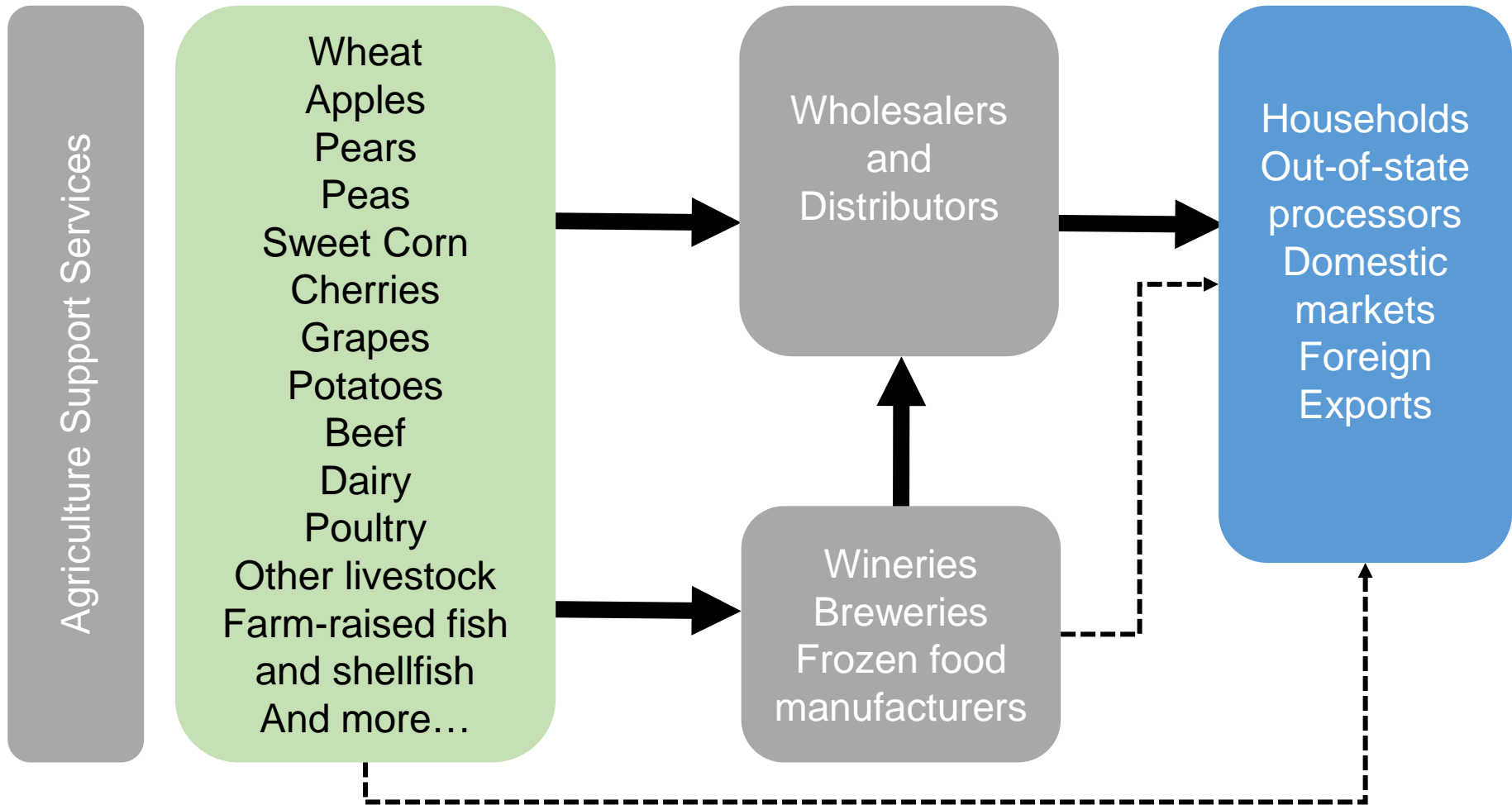
Key Research Questions

- Define the agriculture and food processing supply chain in Washington.
 - To include only processing of commodities grown or raised in Washington, e.g., potatoes, beef, wine, but excluding soft drinks and seafood from the Alaskan fisheries.
- What are the **economic** and **fiscal impacts** of agriculture and food processing to the state?
- What are the risks and vulnerabilities faced by farmers in Washington, including risks from limited water access?

What's Included in this Analysis

- **Crop Production activities**
- **Animal Production activities**
- **Agriculture Support activities:** horticulture services, contract machine harvesting, soil preparation, management services, storing, grading, cleaning, and packing crops, marketing and export assistance, and wholesalers specializing in farm supplies.
- **Food & Beverage Processing:** processing of Washington-sourced agricultural commodities. For example, includes dairy, wine, potato processing, but excludes commercial bakeries, soft drink manufacturing, and wild-caught seafood processing.
- **Wholesaling & Distribution:** consolidation, final shipment, and retail of Washington agricultural goods.

Mapping out the Supply Chain



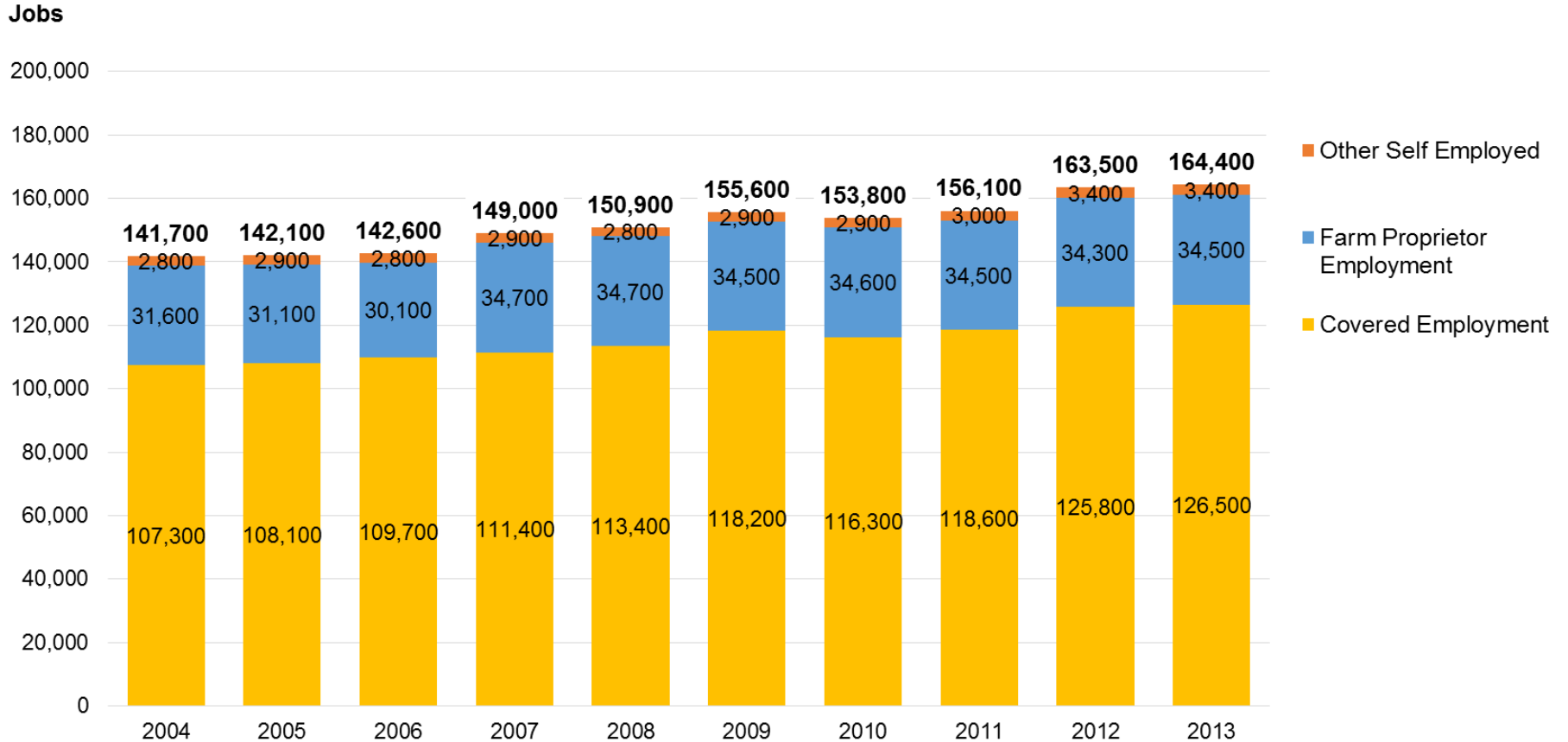
Examples

- **Potatoes:** 87% of output by value sold to processors.
- **Wheat:** Majority sold to consolidators, e.g., Tri-Cities Grain.
- **Apples:** 95% by production value is sold as fresh pack. Roughly 17% of harvested apple tonnage (5% by value) sold to processors like Tree Top.
- **Dairy:** 90% of milk produced in Washington is processed in-state.
- **Grapes:** nearly all sold to processors, e.g., wineries.
- **Food & Beverage Processing:** across all segments of food and beverage processing included, nearly 60% of total purchases were for in-state inputs.
- **Processors** also purchase from other processors, e.g., *ingredient processors* sell goods to Consumer Packaged Goods (CPG) processors.



2. Size of Agriculture and Food Processing in Washington

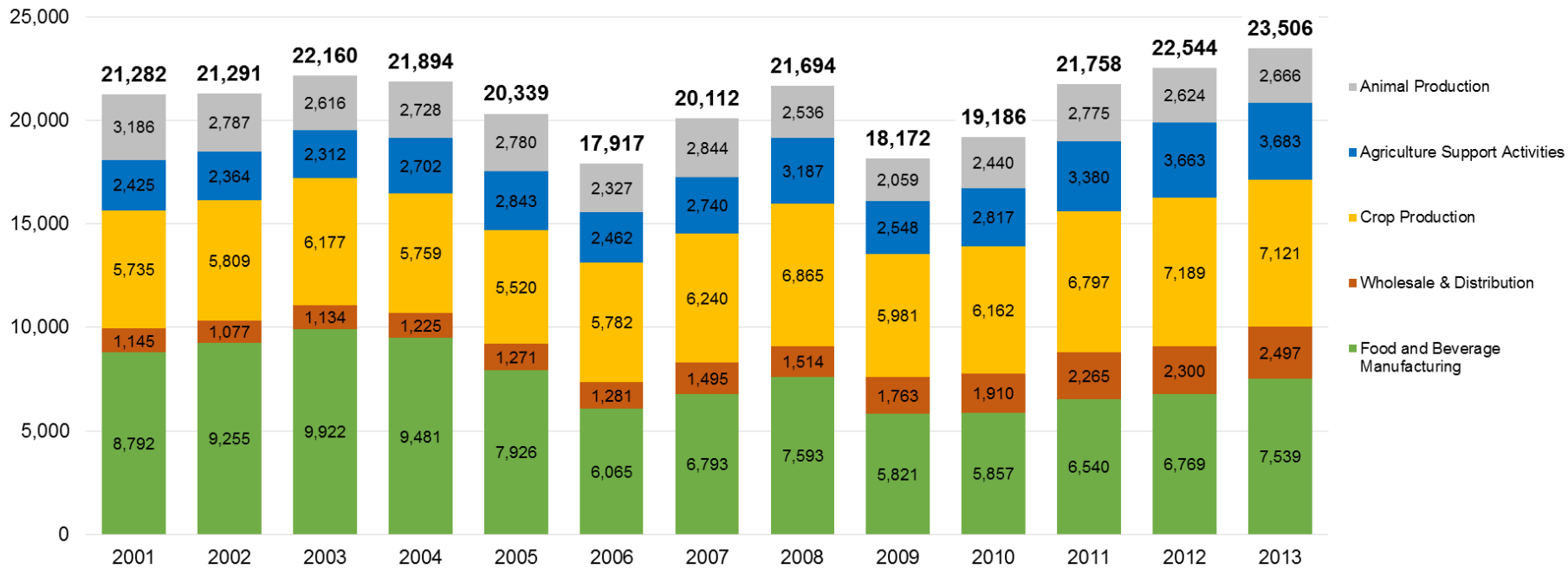
Agriculture and Food Processing Jobs



Sources: U.S. Bureau of Labor Statistics, 2014; U.S. Department of Agriculture, 2014; U.S. Census Bureau, 2014; Community Attributes Inc., 2014.

Business Revenues from Agriculture and Food Processing

Millions 2013 \$



Leading Crop and Animal Product Sales, Washington State, 2013 (millions \$)

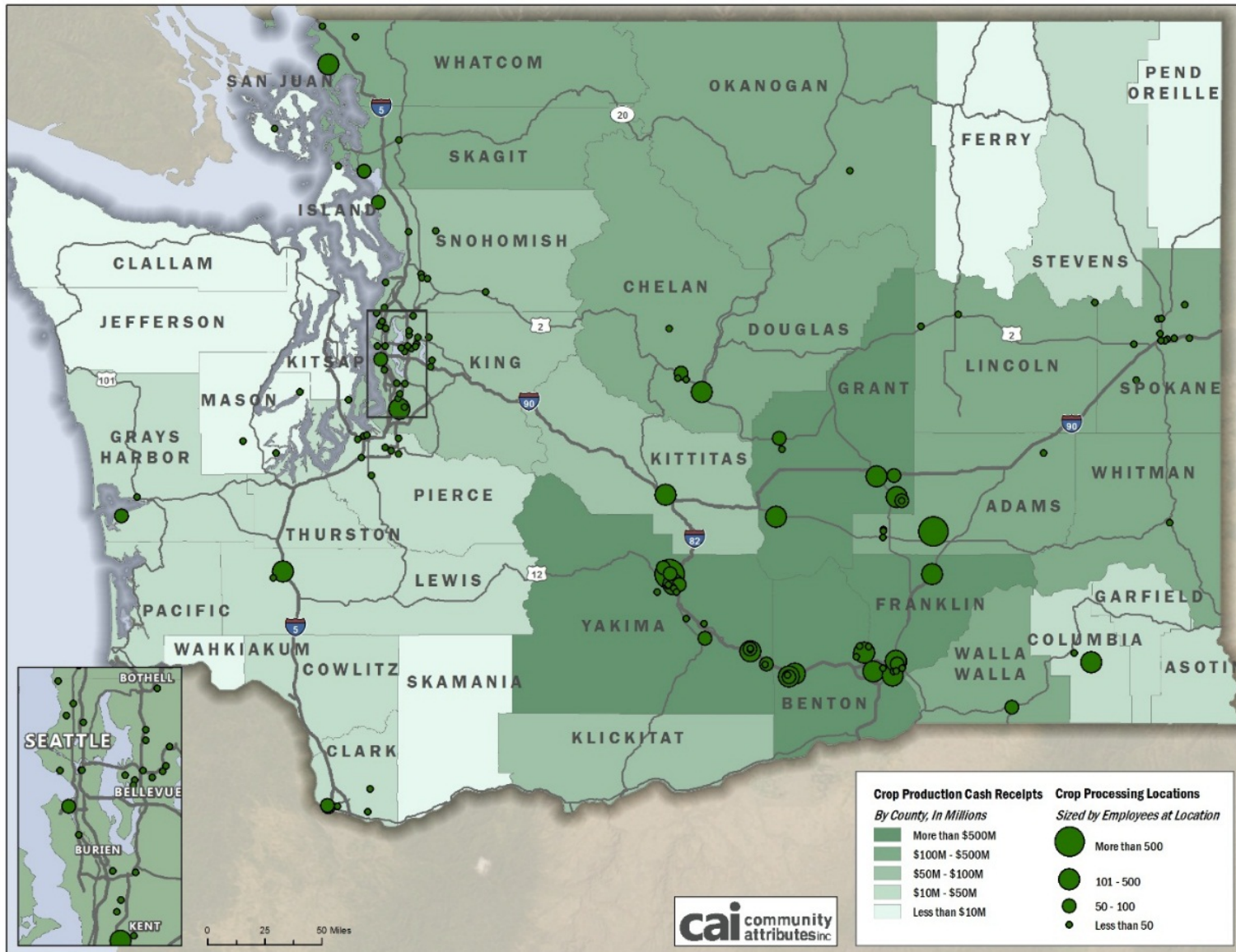
Rank	Commodity	Value (mils \$)	Rank Nationally
1	Apples	2,189.1	1
2	Milk	1,298.9	10
3	Wheat	978.3	4
4	Potatoes	792.0	6
5	Cattle (Including Calves)	706.4	17
6	Hay	683.7	11
7	Cherries	379.0	2
8	Grapes	278.6	2
9	Pears	225.4	1
10	Hops	202.1	1



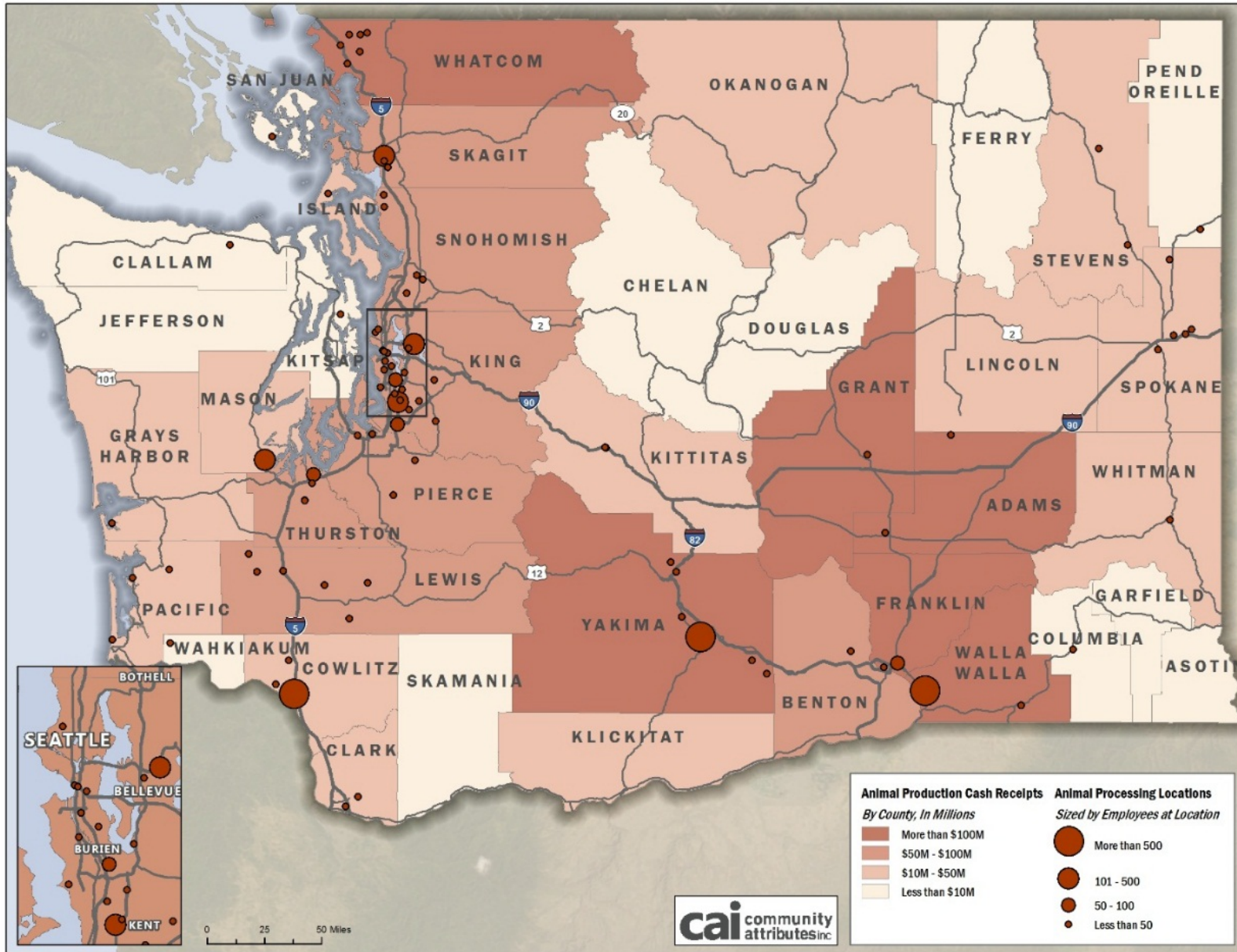
3. Agriculture and Food Processing across the State

Crop Production Cash Receipts and Crop Processing Employment

Strong linkages between food processors and commodity producers.



Animal Production Cash Receipts and Animal Production Employment





4. Economic and Fiscal Impacts of Food Processing

Total Economic Impacts of the Agriculture and Food Processing Supply Chain in Washington, 2013

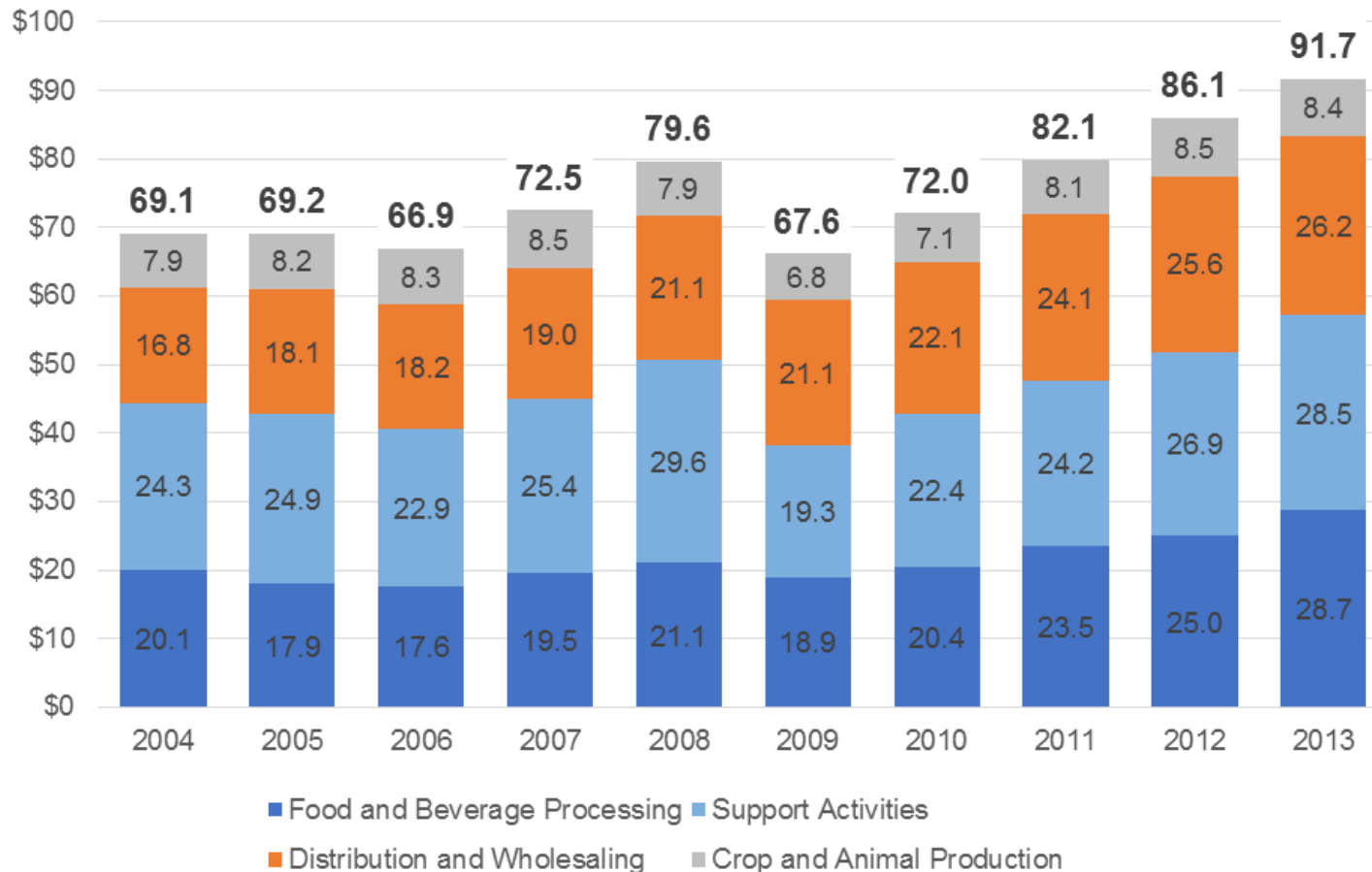
Type of Impact	Direct	Indirect	Induced	Total
Jobs	128,900	31,500	60,200	220,600
Labor Income (mils \$)	4,043	1,757	2,940	8,740
Business Revenues (mils \$)	19,488	6,712	9,359	35,559

Total output per \$ final demand	\$1.82
Total jobs per direct job	1.71
Total labor income per \$ direct income	\$2.16
Total jobs per \$ mil final demand	11.32

Direct State Tax Payments by Activity, 2004-2013

Millions 2013 \$

Millions 2013 \$



Total Statewide Fiscal Impacts, Including Multiplier Effects, 2013

Millions 2013 \$

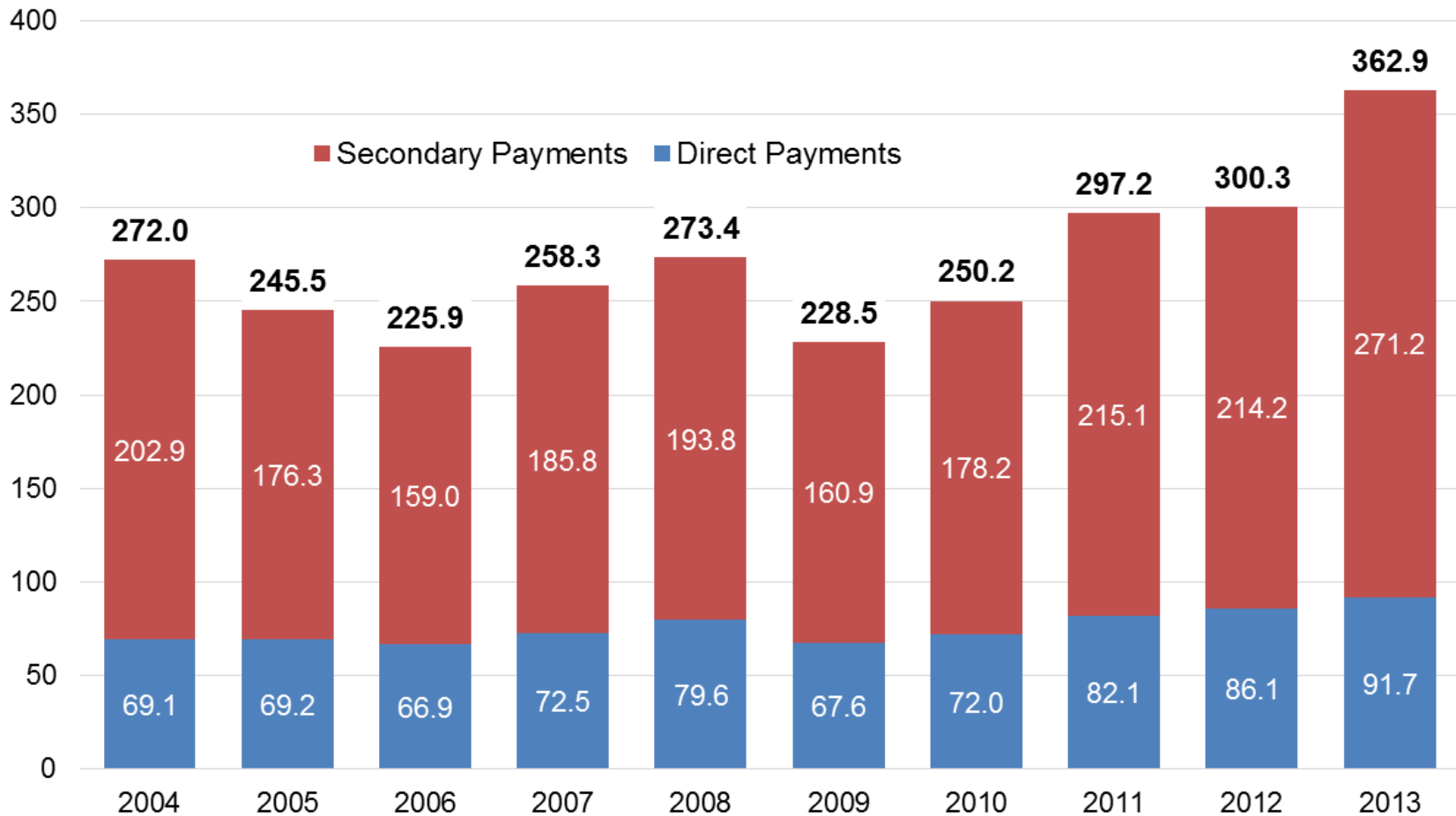
Tax Type	Direct Secondary		Total
	Payments	Impacts	
Sales and Use Taxes	36.6	166.2	202.7
Business & Occupation	50.9	82.2	133.2
Other	4.3	22.7	27.0
Total	91.7	271.2	362.9

- Every \$1 of direct payments is associated with an additional \$3 in payments in other industries.

Total Statewide Fiscal Impacts, Including Multiplier Effects, 2004-2013

Millions 2013 \$

Millions 2013 \$



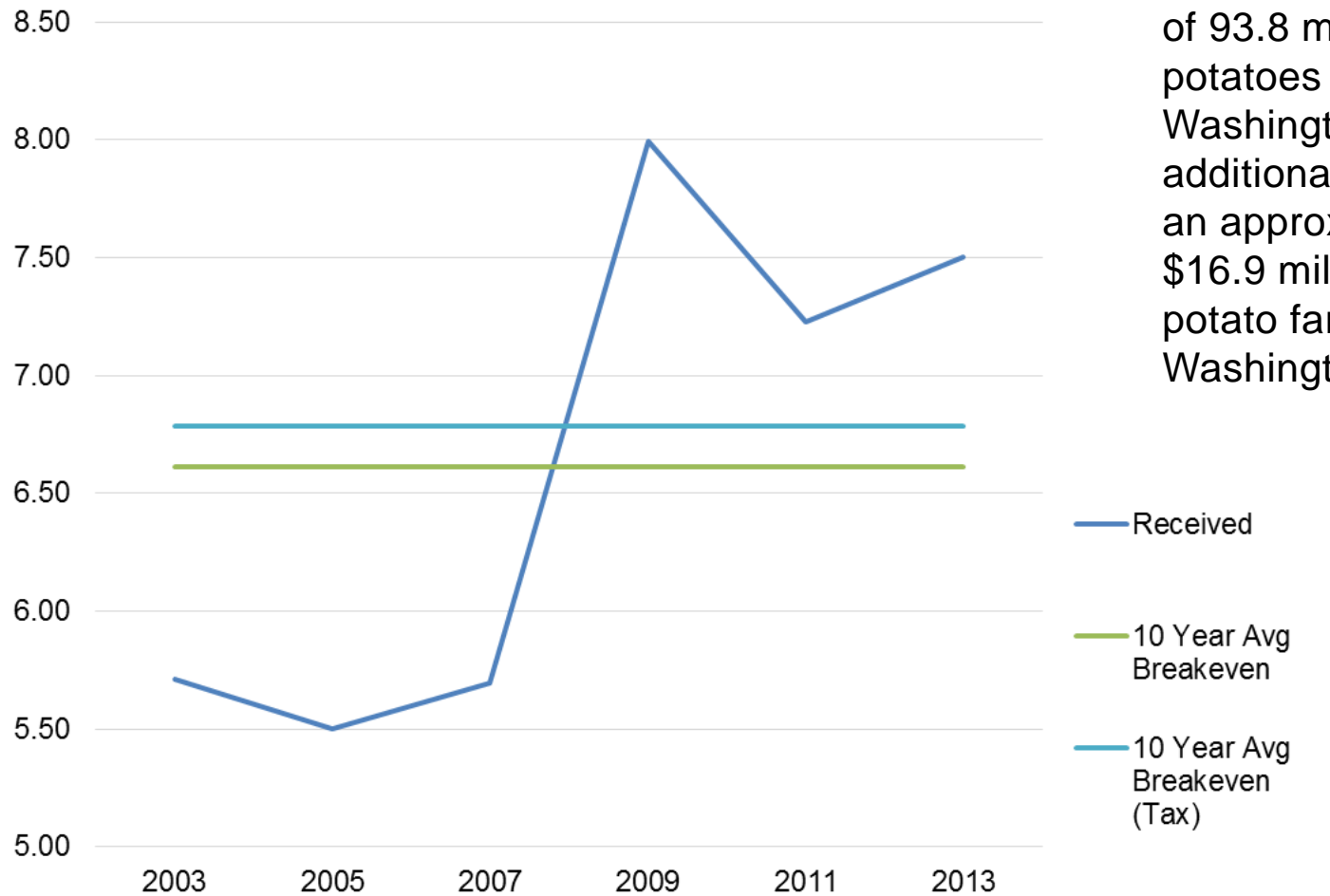


5. Farming Risk Assessment

Wheat Prices Received and Estimated Breakeven Prices, *Fruitful Rim Region, Washington State, 2004-2013*



Potato Prices Received and Estimated Breakeven Prices, Washington State, 2004-2013



- With an average production of 93.8 million cwt of potatoes each year in Washington, the \$0.18 in additional sales required is an approximate savings of \$16.9 million per year for potato farmers in Washington.



6. Feedback from Farmers and Key Issues

Key Issues in Washington

- **Importance of Tax Credits:**
 - Food processors repeatedly cited tax credits as the make-or-break element for competitiveness.
- Water access deemed critical to the life blood of farming and processing, but predictable, reliable sources becoming challenging.
- **Farming and processing is an ecosystem.** If processing leaves, the ripple effects on local farming would be significant.
- **Farmers as Price-Takers:**
 - Most output sold to wholesalers, based on world prices.
 - Cannot pass down lower prices to suppliers.
- **Farmers as Weather-takers**
- Farming involves primarily family farms.
- While the supply chain is large statewide, it is much more important to rural counties.

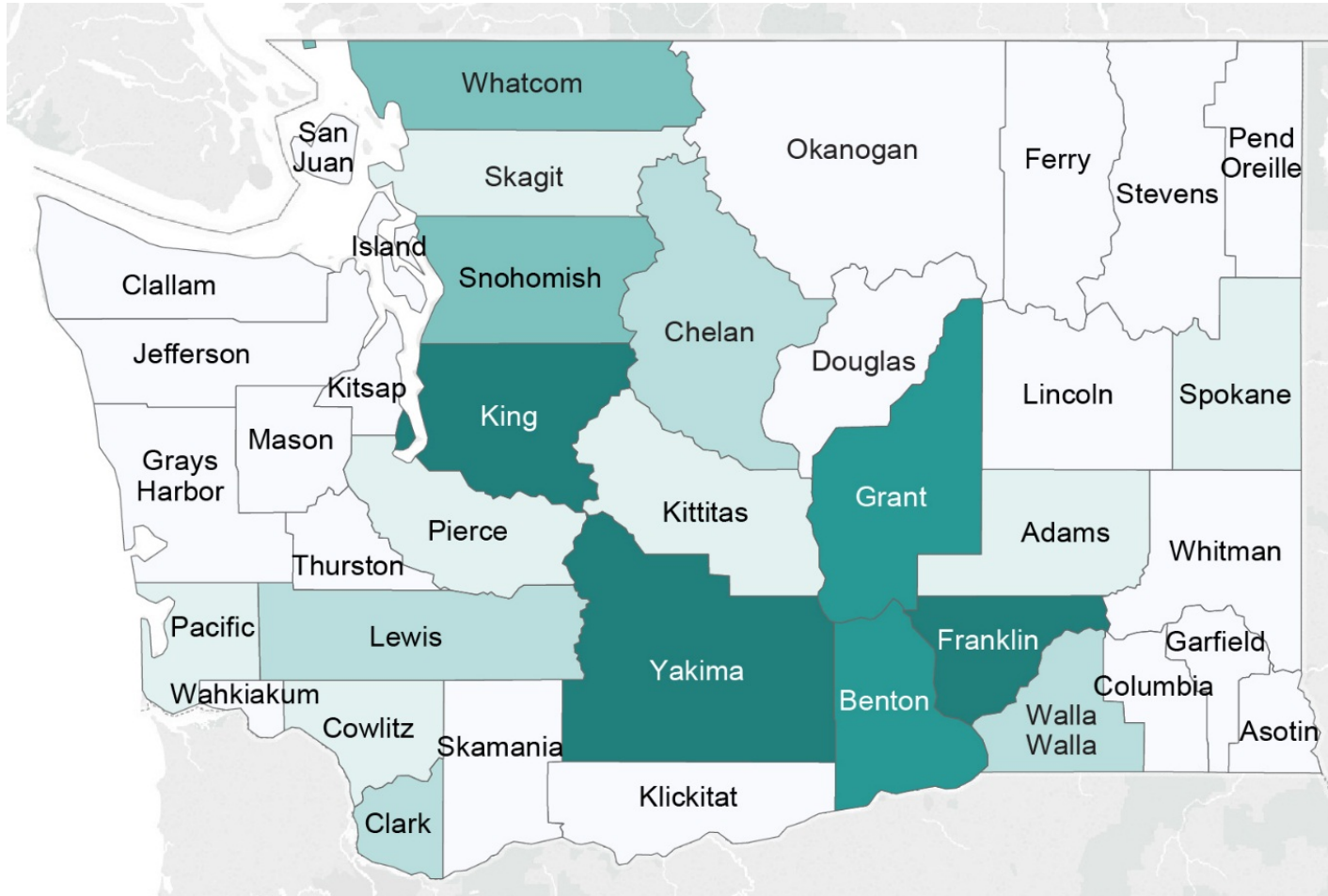


Thank you!

Key Data Sources

- National Agriculture Statistics Service
 - Annual survey data
 - Agriculture Census
- U.S. Bureau of Labor Statistics
- U.S. Bureau of Economic Analysis
- Washington State Department of Revenue (gross business income data)
- U.S. Census Bureau (self-employed workers)

Total Value of Agriculture-Related B&O Tax Exemption Savings by County, 2012



Sources: Washington State Department of Revenue, 2014; Community Attributes Inc., 2014.



Key Issues in Washington (cont.)

- Farmers:
 - “How to move water is a major question for us.”
 - “Our biggest is relying on mother nature to let it grow. We don’t irrigate; we have to guess how much water we have to work with in the upcoming year.”
- Food processors:
 - “There would be more of our facilities here. There’s great rail and highway, raw product grown here, but when we don’t have the infrastructure here, we won’t locate here. For example, the water issues in the Columbia River Basin. The availability of water is a major issue for expansion purposes.”
 - “Water is one of our biggest costs.”

Key Takeaways

- Farming and food processing is big, an important pillar of the state economy, and a major source of capital inflows through exports (domestic and international).
- Farmers face significant risks
 - Farmers are **price-takers**
 - Farmers are **weather-takers**
 - Farming can be volatile—profits are based on a 5-10 year cycle.
- Weather is a core input across the supply chain.
- Water access and reliability is a major concern among farmers, especially as conditions continually change in the coming years. As water becomes less accessible/more expensive, farming families impacted.

What's at Stake?

Washington's largest food processors that operate facilities outside the state:

- **Darigold**, which received 88% of the total value of dairy processing B&O exemptions in 2013, operates two of its four Class I plants outside of Washington State, as well as two of its four dried milk production plants.
- **Lamb Weston ConAgra**, which received 18% of the total value of fruit and vegetable processing B&O tax exemptions in 2013, operates several plants in the Midwest and California.
- **Del Monte Foods** is headquartered in San Francisco and operates 11 food processing facilities and 3 distribution centers around the country. Del Monte also operates production facilities in Venezuela and Mexico.



Appendix

The Costs to Grow Wheat in Washington

- One of Washington's largest export commodities.
- In 2013, nearly \$1 billion in sales.
- DISCUSS COSTS HERE

Water Rights in Washington

- Washington state water collectively belongs to the public and cannot be owned by any individual.
- The state issues water rights, legal authorization to use a predefined amount of public water for a designated use. **Irrigation** and **power** generation are two such uses.
- When water supply is limited and water use needs to be reduced, junior most rights holders face supply cuts first.

Major Local Purchases by Food & Beverage Processors in Washington 2013

Rank Input	Amount (mils \$)	Share of Total Purchases
1 Animal Production	1,324.2	18.5%
2 Crop Production	921.7	12.9%
3 Food & Beverage Processing	571.6	8.0%
4 Wholesale	349.1	4.9%
5 Other Construction	206.8	2.9%
Total Local Purchases	4,250.4	59.3%

Sources: NASS, 2012; U.S. Agriculture Census, 2014; Washington State Office of Financial Management, 2013; Community Attributes Inc., 2014.

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Total Impacts of Entire Supply Chain, 2013

Type of Impact	Direct	Indirect	Induced	Total
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- Total are based in final demand and thus correct for double-counting of sales.
- For example, roughly 20% of all farming and ranching jobs across the state are supported through demand from processors.

Sources of Water

Federal Water Reclamation

The Yakima Project, started in 1905, includes storage reservoirs and is not drought-resistant. Junior water rights holders are often subject to supply interruptions. In the past, **water supply has been as low as 38%** of the water supply goal in the past. Water users pay for the conveyance, and with an older system like the Yakima Project, **conveyance is especially expensive.**

The Columbia Basin Project is an extremely efficient system designed with water reuse in mind. It is one of the youngest systems in the nation. Water rights in areas of the project can be as low as half the cost per acre of the Yakima Project. Several major food processors are located in Columbia Basin Project irrigation districts

Sources of Water

Wellwater

Areas beyond the frontier of water irrigation successfully lobbied the state for groundwater rights for use until irrigation projects could reach them.

Due to compounding delays and increasing costs of expansion, the Columbia Basin Project has not yet reached these areas. Reliance on wells that were never intended for sustained, long-term use has resulted in a widespread drop in the water table.

Approximately 100,000 acres of cropland rely on wellwater and are at risk of losing irrigation.

Sources of Water

Washington's Irrigation System

Map overlaying agricultural production by county, Columbia basin and Yakima project reach?