

BENTON COUNTY VOLUNTARY STEWARDSHIP PROGRAM

Chapter 3 | March 2017

This document shows track changes representing Work Group comments since November 2017.

3.0 AGRICULTURAL CONTEXT

3.1 Value and Extent of Agriculture

Benton County is located in the southeastern portion of Washington state at the confluence of the Columbia, Snake, and Yakima rivers. The land, part of the semi-arid Columbia Basin, lies in the rain shadow of the Cascade Mountains and is naturally dry. But the soil is fertile and supports native plants such as bunch grasses and sagebrush. This vegetation in turn supported the deer and elk that Native Americans hunted, and later, the cattle and sheep of non-Indian settlers. Irrigation began in the 1890s with water drawn from the Columbia River. Farm crops then flourished, including wheat, alfalfa, grapes, strawberries, and potatoes. ... Benton County has very little rainfall, and some farmers had been successful at dryland farming. ... Once there was a reliable water source, orchards and vineyards sprung up all over the Kennewick area. Strawberries were another successful crop. ~ Benton County – Thumbnail History, Historylink.org, by Elizabeth Gibson, 3/29/2004, Essay 5671

Based on the 2012 Census of Agriculture, **Benton County ranks third in Washington State by market value of agricultural products sold, totaling about \$923.2 million in value of crops and livestock.** This is an increase over 2007 Census of Agriculture estimates of \$525.9 million in market value. By market value, Benton County ranks 38th in the nation as of 2012. In Benton County, the top value of commodities are in potatoes, apples, and grapes.

Considering 2013 Washington State Department of Revenue information, **Benton County produces**

\$617 million in income from food processing, which is about ninth place in the state.¹ Employment Security Division information for 2013 shows that **food processing supports the fourth highest number of employees in the state.**

The Tri-City Development Council (TRIDEC) notes that the Tri-Cities area (includes Benton and Franklin Counties) has more than 175 food and beverage manufacturers, including those with over 1,000 employees and smaller production operations. Production is attracted to Benton County by the location of agricultural producers in proximity, access, educated labor force, and lower cost of living.

Also related to production, Benton County's wineries produced just under 9.5 million cases of wine in 2014, beating the second-highest-producing county, King County, by more than 7.2 million cases. Walla Walla county is third with 1.6 million cases.²

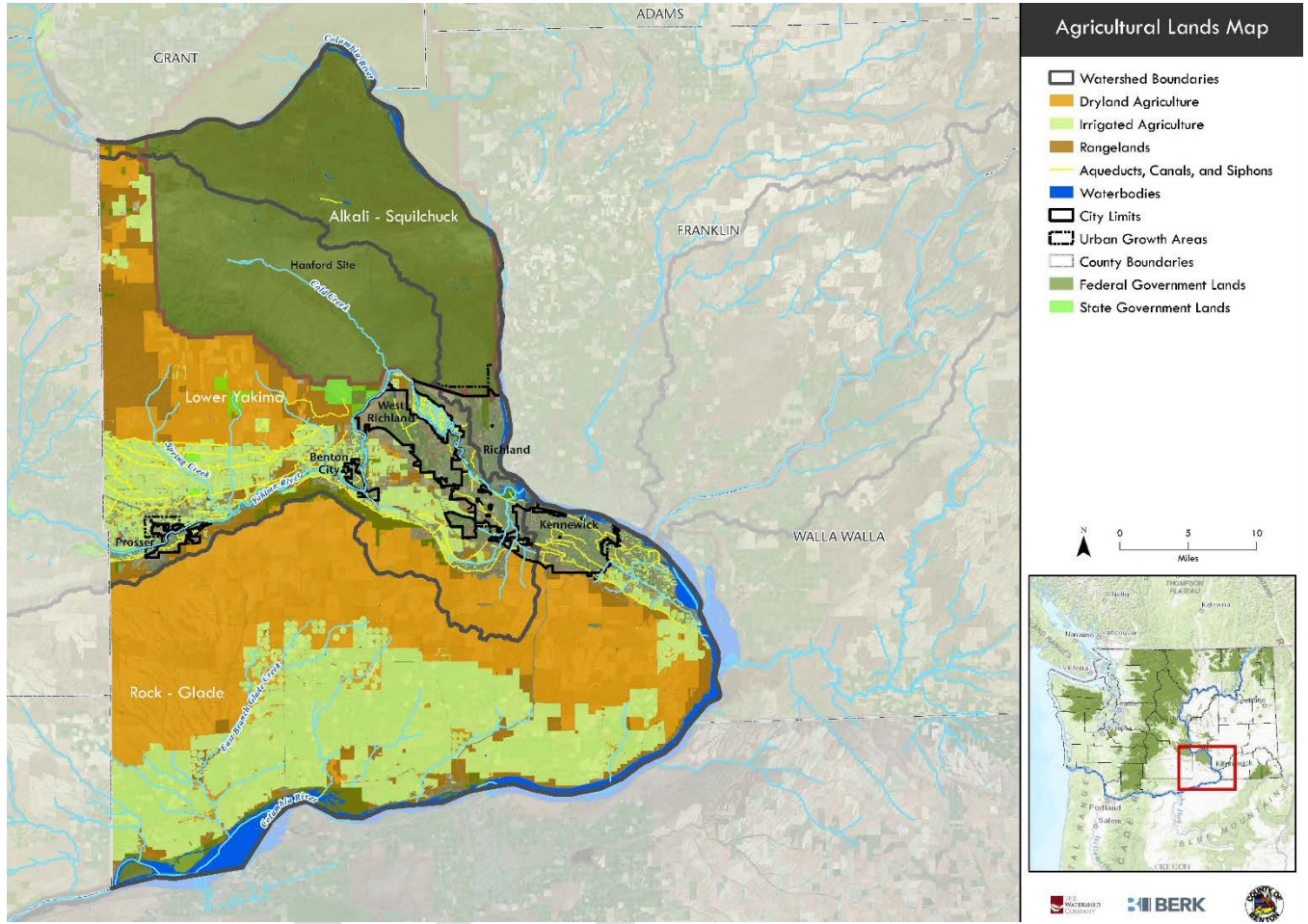
As of 2015, there are about 695,190 acres of agricultural land eligible to participate in the VSP. Irrigated and dryland crops total over 459,500 acres according to the Washington State Department of Agriculture. The approximate location of agriculture is highlighted in Exhibit 1.

**Dryland Agriculture 323,548 acres + Irrigated Agriculture 279,371 acres + Rangeland 92,271 acres
= 695,190 total acres in unincorporated lands eligible under VSP**

¹ See: <http://agr.wa.gov/AgInWa/docs/127-ProcMap2015-Copier.pdf>

² Community Attributes. August 2015. Economic and Fiscal Impacts of Wine & Wine Grapes in Washington State. Prepared for: Washington State Wine Industry. Available: <https://www.washingtonwine.org/>.

Exhibit 1. Consolidated Benton County Agricultural Map



Source: BCD, WSDA, Benton County Assessor, BLM, Ecology, The Watershed Company, BERK Consulting 2016

WSDA information provides more detailed crop type information for dryland and irrigated agriculture; it does not address rangeland. The largest crop type is in wheat/wheat fallow as well as in CRP³/conservation. Other extensive crop types include corn, grapes, potatoes, apples, onion, and others. See Exhibit 2.

Exhibit 2. WSDA Agricultural Data 2011 and 2015

Exhibit 3. WSDA Agricultural Data 2011 and 2015 Crop Type	Acres 2011	Acres 2015
Alfalfa Hay	10,062	5,031
Alfalfa/Grass Hay	1,619	486
Apple	11,364	11,578
Apricot	181	66
Asparagus	27	12
Barley	39	70
Bean Seed	611	47
Bean, Dry	124	
Bean, Green	136	17
Blueberry	2,180	3,337
Bluegrass Seed	6,212	4,665
Buckwheat		73
Caneberry	511	297
Canola	33	
Carrot	1,699	2,440
Cherry	4,878	4,845
Clover Hay		3
Cover/Grass Hay		12
Corn Seed	71	
Corn, Field	18,942	19,250
Corn, Sweet	18,890	29,832
CRP/Conservation	104,536	105,702
Currant	41	
Developed	907	1,219
Driving Range		
Fallow	6,202	6,112
Garlic	1	
Golf Course	10	13
Grape, Juice	5,847	5,161
Grape, Table		4
Grape, Unknown		3
Grape, Wine	17,865	20,553
Grass Hay	775	1,228
Green Manure	51	
Hay/Silage, Unknown		12
Hops	4,503	4,720
Market Crops	14	135

Exhibit 3. WSDA Agricultural Data 2011 and 2015 Crop Type	Acres 2011	Acres 2015
Melon, Unknown		2
Mint	2,357	3,149
Nectarine/Peach	278	52
Nursery, Greenhouse	8	2
Nursery, Orchard/Vineyard	292	56
Nursery, Ornamental	7	25
Oat	112	34
Oat Hay		98
Onion	10,944	12,563
Pasture	5,847	9,419
Pea Seed	1,461	768
Pea, Green	3,117	3,556
Pear	323	284
Plum	39	50
Poplar	2,743	218
Potato	26,488	30,381
Pumpkin	519	235
Research Station	488	505
Rye	3	2
Ryegrass Seed	781	
Sorghum		1
Strawberry		1
Sudangrass		87
Sugar Beet	1,937	1,909
Sunflower		110
Timothy	81	408
Triticale	13	188
Triticale Hay		129
Unknown	80	3
Walnut	24	26
Watermelon	45	
Wheat	100,009	93,407
Wheat Fallow	73,967	74,787
Wildlife Feed	42	69
Grand Total	450,333	459,446

Source: WSDA 2016

³ Conservation Reserve Program (CRP) / Conservation Reserve Enhancement Program (CREP)

WSDA information also shows the change in acres put into production between the VSP baseline of 2011 and 2015, illustrating a net increase of 10,990 acres. While some of the change is due to improved mapping of pastureland and small farms, over 60% represents changes from non-agriculture to dryland or irrigated agriculture. Among the most notable changes include areas not characterized as agriculture in 2011 changing to wine grapes (1,869 acres). The new acreage of wine grapes occurred in the Horse Heaven Hills region.

As illustrated above, **the strength of Benton County's agricultural economy is its diversity.** Due to a combination of factors including the climate with over 300 days of sunshine providing a long growing season, available labor, agricultural infrastructure including access and processing, as well as other factors, agriculture is growing. The primary sectors of the local agricultural economy include:

- Irrigated specialty fruit and herb crops, including but not limited to:
 - Vineyards
 - Orchards
 - Blueberries
 - Hops
 - Mint
- Dryland wheat farming
- Hay/Silage
- Small acreage farms
- Cattle operations
- Row vegetable crops including but not limited to:
 - Potato
 - Corn
 - Onion
 - Green Pea
 - Carrot
- Seed Crops including but not limited to
 - Turf Grass Seed / Bluegrass Seed
 - Pea Seed

Each major category is addressed below.

Agriculture and Food Processing in Benton County



Image: winesandvines.com

Viticulture. Benton County had the highest wine production in the state in 2014, producing nearly 9.5 million cases of wine in 2014.⁴ The county has about 25,000 acres planted in wine grapes and another 5,000 acres planted in juice grapes as of 2015 WSDA inventories.

[The US Department of the Treasury Tax and Trade Bureau identifies American viticultural areas \(AVAs\) in 27 CFR Part 9. Three AVAs are designated within Benton County and beyond including: Horse Heaven Hills, Red Mountain, and Yakima Valley. The Red Mountain American Viticultural Area is a federally designated grape-growing and wine-producing region located in unincorporated Benton County.](#)⁵ Over 1,600 vineyard acres are planted in this 4,040-acre area.⁶



Orchards. Over 11,500 acres are planted in apples in Benton County according to 2015 WSDA data, and contributes to the State's top exported agricultural product. "The Columbia Basin's rich volcanic soil, fed by the cool waters of the Columbia River, nurture vast acres of apples. Blessed by a long growing season, the Basin is noted for producing larger apples and later-maturing varieties."⁷

Another sizable amount of acres, over 4,800, are planted in cherries based on 2015 WSDA data. "Washington State is the 3rd largest producer of tart cherries and the leading sweet cherry producer in the United States."⁸

Blueberries



Blueberries are known for being grown in Western Washington, and Whatcom County is the top producer. However, that is changing with almost half grown in Eastern Washington. "In 2012 40% of Washington's blueberries were grown in Eastern Washington where the dry climate minimizes pest problems. Eastern Washington now has about 4,300 acres of blueberries, mostly in Benton, Franklin, Walla Walla, Grant and Yakima counties."⁹ That total figure across the five counties is likely higher now. The 2015 acreage in blueberries in Benton County alone is 3,337 acres, up over 1,200 acres from the year 2011.

⁴ Washington State Wine Commission, 2015. Economic & Fiscal Impacts of Wine and Wine Grapes in Washington State.

⁵ [Red Mountain AVA Master Plan](#).

⁶ Washington State Wine Commission. <https://www.washingtonwine.org/wine/facts-and-stats/regions-and-avas>.
<https://www.washingtonwine.org/wine/facts-and-stats/regions-and-avas/red-mountain>

⁷ Washington State University Extension. 2013. Apples. <http://extension.wsu.edu/benton-franklin/tag/tree-fruit/>.

⁸ Washington State University Extension. 2013. Cherries. <http://extension.wsu.edu/benton-franklin/2013/12/cherries/>.

⁹ <http://www.washivore.org/blueberries>

Hops



According to USA Hops, a trade organization, “the Yakima Valley of Washington State is one of the most important hop growing regions in the world. Approximately two-thirds of the hops produced in the Yakima Valley are exported to countries all over the globe.”¹⁰ As a whole, the valley in both Yakima ~~and~~ Benton Counties contains about 75% of the US hop acres. The WSDA has identified about 4,720 acres of hops in Benton County and another 28,354 acres in Yakima County.

Source: nbcrightnow.com

Mint



Washington State is a national leader in the production of mint oil. Growers produce about 3.5 million pounds a year on 28,000 acres in the Yakima Valley and the Columbia Basin. WSDA has estimated 3,149 acres in mint in Benton County as of 2015. (Yakima County has over 11,000 acres.)

Statewide mint information and photo source: <http://www.washivore.org/mint>



Wheat

“Washington farmers produce the fourth-most bushels of wheat in the nation.”¹¹ Wheat for grain is the largest crop in Benton County, by acreage, with nearly 94,000 acres planted and another 75,000 acres fallow as of 2015 Washington State Department of Agriculture inventories.

Image: Washington State University

Hay/Silage



“Benton, Franklin and Walla Walla counties counties represent 30.5% of all alfalfa production and 24.2% of all hay produced in the state of Washington.”¹² In 2015 WSDA reported the total acreage in hay/silage in Benton County was 7,495.

¹⁰ http://www.usahops.org/index.cfm?fuseaction=hop_farming&pageID=13

¹¹ Tri-City Herald. October 19, 2012. Farmers bust records for values of six crops, all grown in Mid-Columbia. <http://www.tricityherald.com/news/local/article32088195.html#storylink=cpy>.

¹² <http://www.wa-hay.org/chapters/columbia-basin.html>

Small Acre Farms

The 2012 Census of Agriculture shows that most of the farms in the County are less than 50 acres (76%). About 45% are less than 10 acres. WSU-Extension offers a small farm team that provides research and education for small farms that are often part of the local food system.

	Number	Percent
1 to 9 acres	686	45%
10 to 49 acres	461	31%
50 to 179 acres	161	11%
180 to 499 acres	84	6%
500 to 999 acres	29	2%
1,000 acres or more	88	6%

In unincorporated areas, the County's GMA agricultural zoning assumes about 20 acres minimum parcel size for new divisions.

Cattle Operations

Benton County has the fifth largest cattle inventory in the state according to the 2012 Census of Agriculture.

Other important livestock are pheasants, layers (egg laying poultry birds), bees, and quail.



Row Crops: Vegetables

WSDA reports the following at over 2,000 acres in 2015: Potato 30,381 acres, Sweet Corn 29,832 acres, Onion 12, 563 acres, Green Pea 3,556 acres, Carrot 2,440 acres.

Images: Washington State University Extension



Benton County is #2 in the state in potato production, and #5 in the nation. Over 30,000 acres are planted in potatoes as of 2015 WSDA data.

Row Crops: Marijuana Growing Operations

Benton County allows marijuana to be grown in the County's GMA Agricultural, Rural Lands 20, Light Industrial, and Heavy Industrial zoning districts. Marijuana may be processed in the County's Heavy Industrial and Unclassified zoning districts. Subject to any limitations imposed by Washington State law, marijuana may be processed in the County's GMA Agricultural zoning district only if the nature of the processing falls within the definition of an "agricultural related industry" as defined in Chapter 11.04 BCC. (Resolution 2015 358)

Countywide, state information shows there are 23 marijuana producers/processors. There are three retail stores.

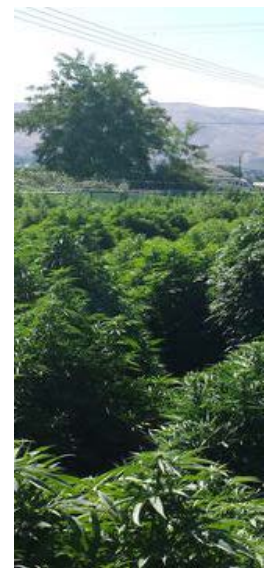
Producer sales between 2014 to 2016 have ranged as follows:

- 2014 \$767,863
- 2015 \$477,685
- 2016 \$531,610

Processor Sales were as follows:

- 2014 \$464,481
- 2015 \$1,525,437
- 2016 \$1,528,181¹³

Image: Fireweed Farms, Prosser



¹³ Benton County Monthly Marijuana Tax Revenue. Available: <https://www.502data.com/county/benton>.

Seed Crops

WSDA has reported 2015 planted acreages as follows: Bluegrass (4,665 acres), Pea Seed (768 acres).¹⁴



Source: <http://www.desertgreenturf.com/>

3.2 Common Practices by Agricultural Type

Conservation Practices: Agricultural producers in Benton County continue to innovate their farm practices and increase their efficiencies while stewarding the environment. Common practices include but are not limited to:

- Cover crops to provide permanent vegetative cover that improves soil quality and reduces erosion
- Fencing for browsing animal management
- Fish screens [at irrigation diversions](#)
- Integrated Pest Management
- Irrigation Conversion and Irrigation Water Management such as: trellis and irrigation systems, pond and irrigation canal lining, center pivot low energy precise application (LEPA), variable frequency drive, irrigation scheduler/precision irrigation
- Pesticide disposal / washing containers in vegetated areas
- Poles / boxes for birds of prey (“raptor poles”)
- Pollinator habitat (e.g. end of rows, outside pivot circles)
- Upland wildlife habitat planting (e.g. Mercer Canyon)

The Benton Conservation District shows application of a range conservation practices through its programs, particularly regarding irrigation conversions and water management as well as fish screens.

Exhibit 4. Benton Conservation District – Conservation Practices 2011-2015

Practice	No.	Amount	Value	Critical Resource Areas Potentially Impacted
CREP	3	20,948	Feet	FWCA, Wetlands, Freq. Flooded
Fencing	4	21,122	Feet	FWCA, Wetlands, Freq. Flooded
Field Borders	1	160	Acres	?
Fish Screen	12	12	No.	FWCA, Freq. Flooded
Irrigation Conversion	14	278	Acres	CARA, FWCA
Irrigation Water Management	6	21,988	Acres	CARA, FWCA
Livestock Nutrient Management	1	1	No.	CARA
Pond Lining - Irrigation	2	2	No.	CARA, FWCA

¹⁴ See also: Mid-Columbia great for turfgrass seed, September 27, 2012: <http://www.tricityherald.com/news/local/article32084733.html>

Practice	No.	Amount	Value	Critical Resource Areas Potentially Impacted
Residue Management	1	1	No.	?
Riparian Restoration	2	650	Feet	FWCA, Wetlands, Freq. Flooded
Variable Frequency Drive	1	3,944	No.	CARA, FWCA
Windbreak	1	270	Feet	FWCA

The NRCS also shows approximately 147 contracts over the 2011-2015 period addressing pest management, irrigation systems and management, tillage management, nutrient management, and others.

Agricultural Practices and Market Demand: ~~Customers are in demand for pP~~ products that are grown sustainably and with attention to food safety are in demand by customers. Example programs include:

- Global GAP [Good Agricultural Practices], which asks producers how much land is set aside for habitat, ~~or~~ in Benton County products certified include tree fruit, blueberries, and peppers/chilies. A chart showing acreage certified appears on the following page.
- Vinewise, an educational program that helps grape growers and vintners assess their practices against “industry standards of sustainability.” This self-assessment tool is scored. (Chateau Ste. Michelle, the largest winery in the state, requires all their growers to score themselves using the Vinewise checklist).
- LIVE provides third-party certification against a checklist that measures the level of environmental responsibility in winegrowers’ farming practices.
- SalmonSafe, a certification program that promotes practices that protect water quality and restore habitat. A grower can also be certified SalmonSafe through the LIVE Certified program.

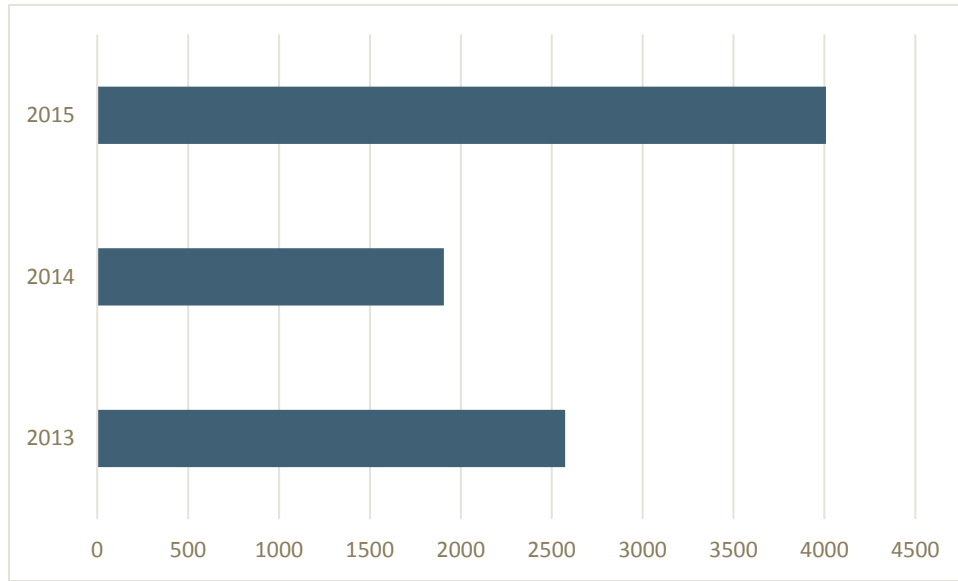
Agricultural viability can be defined as the ability of a farmer or group of farmers to:

- productively farm on a given piece of land or in a specific area,
- maintain an economically viable farm business through experience, exploration, ingenuity and technology,
- keep the land in agriculture long-term, and
- steward the land so it will remain productive into the future.

~ Washington State Conservation Commission. Undated. Agricultural Viability Toolkit. Available: November 2016. See also footnote 1.

~Also Benton County VSP Work Group

Exhibit 5. Benton County Global Gap Total Acreage Certified: 2013-2015



Source: Global Gap, 2016

There is also an increasing demand for organic products. [The WSDA provides a checklist for crop producers to prepare an organic system plan.](#)

It is noted by the Work Group members that switching from a crop like pears to raising grapes cuts water use in half.

3.3 Agricultural Viability Importance and Challenges

Water availability, an adequate agricultural land base, reasonable regulations, market infrastructure, and educational and technical assistance are important to Benton County's agricultural viability.

- Adequate agricultural water rights and resources – Reliable water supplies that retain water rights for agriculture now and in the future are important. Irrigation districts could potentially provide monitoring and may contribute to stewardship work plans.
- Adequate agricultural land ~~and aquaculture~~ resources base – [increased development is a challenge for achieving the agriculture and conservation goals of the VSP.](#) ~~there is urban s~~prawl and orchard conversion [are](#) happening. The cost of land is a problem. There is a need for succession planning. At the same time there is a need to allow agriculture to expand. Where is agriculture the highest and best use? Where are critical areas that cannot be compromised? Are there priority corridors that can be retained and allow agriculture elsewhere? Often the corridors for wildlife are likely to be in areas that are not suited for growing, e.g. due to slopes or poor growing conditions in ravines.
- Reasonable regulatory standards (environmental and labor) – regulatory certainty is important and there should be an avoidance of excessive regulations. The regulations should be science-based.
- Adequate farm-to-market infrastructure – there has been vertical integration of production and distribution. In the lower valley there is an issue with the amount of potable water for wineries and processing plants. How many more plants can be sustained?
- Adequate community support, technical assistance, and public education – sufficient resources are needed.