

The Economic Contributions of Verde Valley Winemaking

Prepared for / in conjunction with:



Prepared by:

Erik Glenn
Yavapai County Cooperative Extension

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This report provides conservative estimates of the economic contributions the wineries, tasting rooms and vineyards located in the Verde Valley made to the local (Yavapai and Coconino counties) and state economies during the fiscal year July 1, 2009 - June 30, 2010. Updates for the year ending December 31, 2010 are also given in some cases.

The methodology for this study is described on page 31.

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Correspondence regarding this document should be sent to:

Erik Glenn
Project Manager, Regional Center for Sustainable
Economic Development
Area Assistant Agent, Yavapai County Cooperative
Extension
The University of Arizona
1955 E 6th St
Tucson, AZ 85721
erikg@cals.arizona.edu



Source: *Photography by Janise Witt.*

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I'd like to thank Pam Denney, as well, for her assistance in scheduling the first round of interviews I undertook.

Finally, I would like to express my appreciation to all of those people who were willing to talk to me about their operations. Of course, this report could not have been written without the detailed (and often proprietary) information they willingly shared with me.

I do also want to apologize that this report was completed six months behind schedule (my original target was late September/early October). Hopefully, the information detailed here can still be of use to those interested in Verde Valley winemaking.

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Executive Summary

- The **total of all economic activity in Arizona** related to Verde Valley wine is **estimated to be almost \$25 million**.
- Over **78 acres** of wine grapes are planted and viable in the Verde Valley; there are **14 vineyards** (some under the same ownership).
- During FY 2009-10 (from the 2009 Crush), the **13 licensed & bonded wineries** in the Verde Valley produced **over 21,000 cases** of wine. *(2010 crush estimate: ~27,000 cases)*
- Local wineries, vineyards and tasting rooms **employ 124 people**. When part-time and seasonal workers are converted to full-time equivalents, the employment figure is **74.11 FTE**.
- These firms' total **payroll is over \$2 million**.
- Verde Valley wineries, vineyards and tasting rooms have a **direct economic output of about \$5.5 million**. *(2010 estimate: ~\$6 million)*
- **Total spending** by Verde Valley wineries/vineyards/tasting rooms with other private firms totaled **more than \$6.5 million** during FY 2009-10. This doesn't include payments to employees or governments (payroll, benefits, taxes, etc.). *(2010 estimate: ~\$7.7 million)*
- As a rapidly-growing industry, **about \$3 million** of that business-to-business spending was for **capital expenditures**.
- Verde Valley winemakers made **more than \$81,500 in charitable contributions** during this time period.
- The **total of all economic output** in Yavapai and Coconino counties related to Verde Valley wineries/vineyards/tasting rooms, their suppliers and their employees (i.e. the sum of the direct, indirect and induced impacts) is **almost \$8.5 million**. *(2010 estimate: ~\$9.3 million)* **Value added**, a measure of net economic contribution, is **over \$3.9 million**.
- Another \$870,000 in economic activity is generated in the other 13 Arizona counties due to Verde Valley wineries/vineyards/tasting rooms, their suppliers and their employees. *(2010 estimate: ~\$960,000)*
- An estimated \$15 million in additional economic activity is generated in Yavapai and Coconino counties due to Verde Valley wine sales and Verde Valley wine tourism that takes place outside the wineries and tasting rooms.

Full Report

Introduction

Winemaking has been an important activity in the Verde Valley of northern Arizona for much of the region's history. Due to the vision and dedication of a growing group of winemakers, the industry is thriving and growing once again.

When compared to other states in the U.S., the wine industry in Arizona is still in its infancy and therefore relatively small. The Verde Valley isn't even the oldest or largest wine-producing region in the State. Regardless, this report will document several things: 1) Verde Valley winemaking is strong and it is expanding; 2) Verde Valley winemaking makes numerous valuable economic contributions at the local, county and state levels; 3) it offers many other benefits to rural communities, thereby enhancing residents' quality of life; and 4) although vibrant, the industry does face challenges—continued popular and governmental support are vital if winemaking in the Verde Valley is to continue growing and thriving.

Background/History of Project

This project was undertaken at the request of the Verde Valley Wine Consortium. For some time, members have wanted to see a research study that would quantify the wine industry's economic contributions. Such a study could be used for a variety of purposes, including lobbying efforts, marketing programs and grant applications.

As part of his program of work through Yavapai County Cooperative Extension, the author offered to conduct such a study for the Consortium **at no cost**. Supplementary support (travel costs, printing costs, etc.) for the project was provided by the Regional Center for Sustainable Economic Development ("the Center"). The Center is funded by a University Center grant from

the Economic Development Administration, part of the U.S. Department of Commerce. The Center provides technical support, research and training services to economic development entities throughout Arizona.

Overview of Report

This report is organized into several main sections based on the type of economic contribution made (employment/payroll, revenue or output, local expenditures, taxes paid, etc.). In addition, the first two sections of the report focus on production at both vineyards and wineries. Later in the report, our focus will shift to other industries—both locally and around the state—that benefit from spending by winemakers and their employees or the actual product itself. Finally, we'll discuss a few of the general trends shaping winemaking in the Verde Valley, including some of the opportunities and challenges that lie ahead. The end of the report contains sources along with a description of the methodology used and the survey/interview instrument.

There are several important things that need to be taken into account when reading and interpreting this report. **1)** The results reported here are primarily primary data collected directly from winemakers and their employees through personal, confidential interviews. However, the author did not get full participation from all winemaking entities, and even when interviews were completed, often the data reported were not complete. So, the primary data were supplemented in many cases by either a) additional secondary data collected from other sources or b) estimates based on the larger sample. Due to this reality, the figures presented here can be considered conservative estimates. **2)** As mentioned previously, the majority of the figures in this report are for the period from July 1, 2009 to June 30, 2010 (which covers the 2009 crush). However, since the report was intended to be completed in October 2010, but unfortunately couldn't be finished until April 2011, some supplementary figures for the year ending December 31, 2010 (which

include production numbers from the 2010 crush) are also provided. Regardless, all data are in 2010 dollars. **3)** Contrary to many other publications, this report details economic *contributions* to local and state economies, not economic *impacts*. In a nutshell, this means that the figures reported here don't necessarily represent net economic activity (with the exception of the *Value Added* data—defined on page 21), nor do they imply that all of this economic activity would completely disappear if winemaking didn't exist in the Verde Valley.

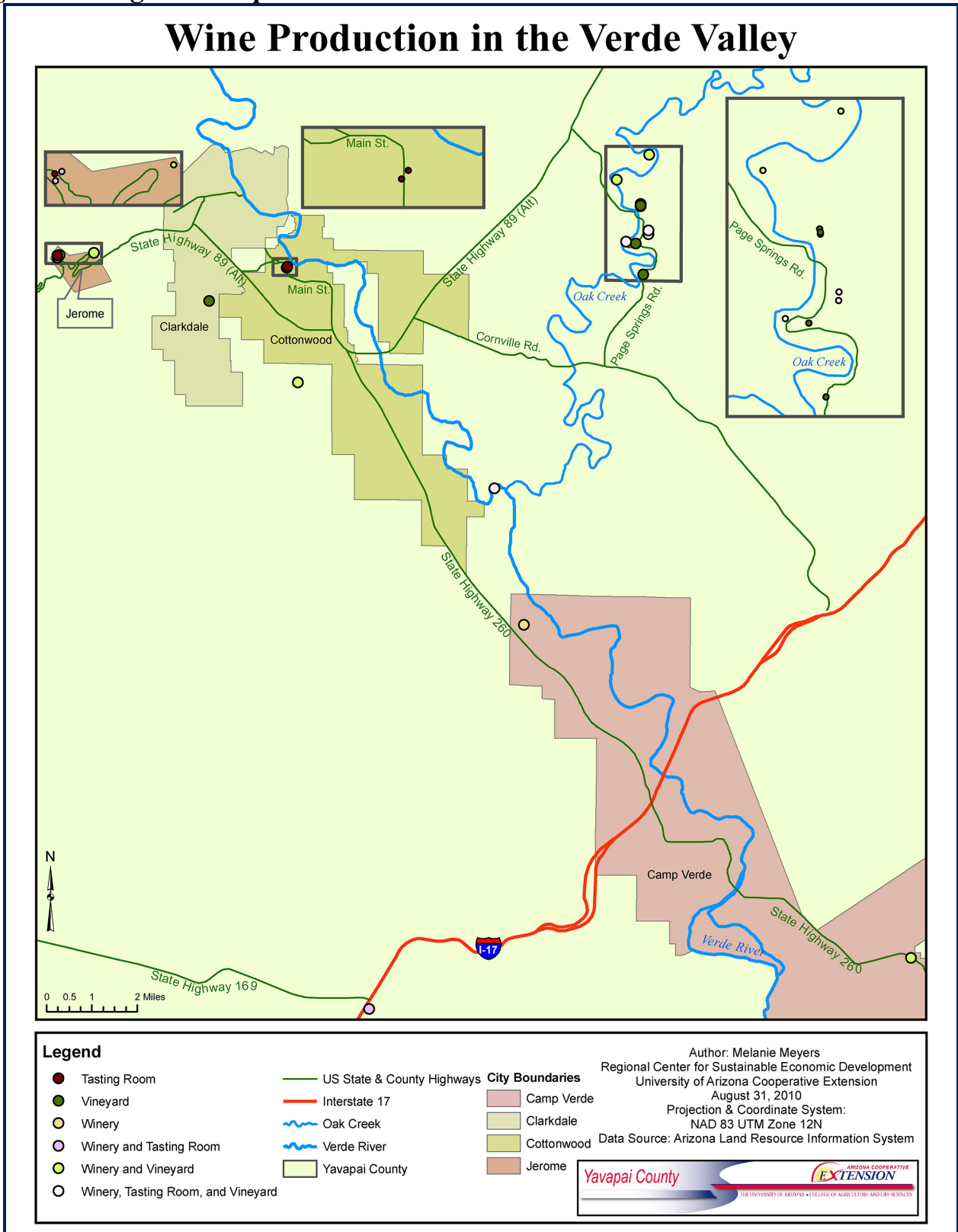
Basic Information

The wine industries in the Verde Valley are made up of three separate entities: vineyards, wineries and tasting rooms. For the purposes of this report, the differences between them can be thought of this way: vineyards are the locations of the wine grapes, wineries are the locations where the wine is actually created (and the locations that are licensed as such by the state or federal government), and tasting rooms are the locations where the public can sample, drink and purchase wine. As can be seen in *Figure 1*, often one location or parcel of land can contain more than one of these entities. In addition, there is a great deal of vertical integration in the industry: often, several vineyards, wineries and/or tasting rooms have the same ownership.

Figure 1 also demonstrates the spatial distribution of winemaking in the Verde Valley. Winemaking occurs across the region, but is concentrated in a few main areas: 1) the Page Springs area; 2) Cottonwood; and 3) Jerome.

As mentioned above, the wine industry in the Verde Valley is comparatively small. At the time of this report, there are 14 vineyards, 13 wineries and 10 tasting rooms in the Verde. In addition, though, there are numerous wholesalers and retailers around the state that buy and sell Verde Valley wines. On a more local level, there are at least 25 wine stores or wine bars in Yavapai or Coconino counties that sell Arizona wine (made in the Verde Valley or elsewhere).

Figure 1—Regional Map



Finally, it should be pointed out that Verde Valley winemaking operations have a variety of relationships with vineyards and wineries in the other parts of the state and country.

Vineyards

| | |
|-------------------------------|--------------------|
| Number of Vineyards: | 14 |
| Total Acreage Planted: | 78.35 acres |

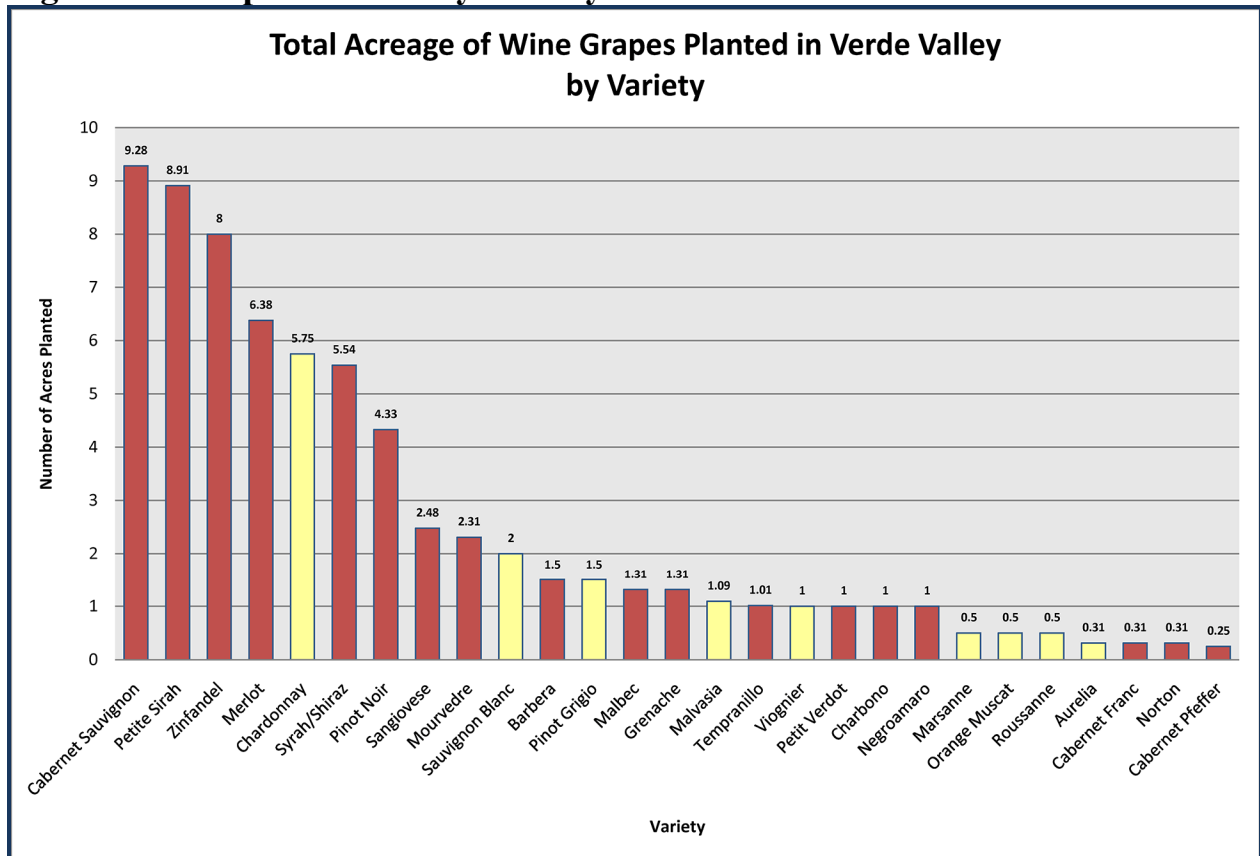
As noted above, there are currently 14 vineyards in the Verde Valley; however, many of those are under the same ownership. All in all, there are approximately 78 acres of grapes planted and viable in the region; however, this figure does include about 11 acres that aren't currently producing but could in the near future. Most producing vineyards are owned by local wineries, while others are stand-alone operations that supply the wineries. There is also additional acreage (~15 acres) in the Verde Valley that has been planted but is dormant or otherwise not currently viable.

As will be highlighted later in this report, the grapes grown in the Verde are not sufficient to produce the volume of wine that comes out of local wineries. Most winemakers have to supplement local grapes with fruit or juice from outside the region; however, more and more of that shortfall is now coming from other parts of Arizona.

A very unique feature of grape production in the Verde Valley is its diversity compared to other grape-growing regions. Many winemakers have used local vineyards to experiment with a large number of different grape varieties (see *Figure 2*). They have therefore been able to test which varieties grow best in different locations, as well as which varieties blend well together.

As *Figure 2* shows, production is dominated by red grape varieties—Cabernet Sauvignon, Petite Sirah and Zinfandel account for one-third of all viable acreage—although some whites are grown, as well.

Figure 2—Grapes Planted by Variety



Wineries

Number of Wineries: 13
Total Wine Production: 21,100 cases+ (~50,200 gallons)
 (2010 crush estimate): (~27,000 cases; ~64,200 gallons)

As portrayed in *Figure 1*, there are 13 local wineries in the Verde Valley region. This list includes all federally-licensed and -bonded wineries in the region, and also corresponds with the

list of Arizona-licensed domestic farm wineries. It should be noted that not all of these licensed wineries are currently crushing/producing.

Those 13 wineries together produced over 21,100 cases during the study period (from the 2009 crush). Based on selected figures reported from the 2010 crush, it appears that production will be up about 25% this year compared to last year; production from the 2010 crush is estimated to be about 27,000 cases.

Verde Valley winemakers produce an extremely wide array of wines. Reds, whites and roses, both as varietals and blends, are made in the Verde Valley. Prices range from about \$10 per bottle to over \$100 per bottle; however, the majority of the wines produced are in the \$15-\$35/bottle range.

Employment

Direct Headcount Employment: 124
Direct Full-Time-Equivalent (FTE) Employment: 74.11

Vineyards, wineries and tasting rooms in the Verde Valley are significant employers, although much of their workforce is part-time or seasonal in nature. Regardless, we estimate that there are 124 people employed directly by winemakers in the region. Details on the breakdown between full-time, part-time and seasonal employees are given in *Figure 3*. That table also includes two numbers that can help us better understand the significance of this employment: Full-Time Equivalent (FTE) employment and Local FTE employment.

Since part-time and seasonal workers don't work as many hours in a year as full-time workers, we can convert part-time and seasonal positions to Full-Time Equivalents; this is done using the number of hours per week that part-time employees work, and the number of weeks per year that seasonal employees work. As shown in *Figure 3*, even when we account for those who

work less than 40 hours per week or 52 weeks per year, Verde Valley winemakers employ the equivalent of 74.11 full-time positions, a significant number.

Even more importantly, the Local FTE figure of 72.10 tells us relatively how much these employees contribute to the local economy. As noted, 97% of all employees live in the Verde Valley, so the majority of take-home pay is spent locally on goods and services like housing, food, healthcare, etc.; there are very few incommuters (people who live elsewhere but commute into the Verde Valley for their jobs) who take their paychecks home to another community. The next section talks about payroll in more detail.

Figure 3—Direct Employment

| | |
|---|--------------|
| Headcount | 124 |
| Full-time | 36 |
| Part-time | 49 |
| Seasonal | 39 |
| | |
| FTE (full-time equivalent) | 74.11 |
| | |
| Local FTE | 72.10 |
| <i>97% of employees live in Verde Valley—few incommuters means \$ spent locally</i> | |

Wages/Payroll

| | |
|----------------------------|----------------------|
| Total Payroll: | \$ 2,026,000 |
| Total Labor Income: | \$ 2,178,600+ |

Verde Valley vineyards, wineries and tasting rooms have a combined payroll of over \$2 million. As mentioned in the previous section, most wine industry employees live in the Verde

Valley; therefore, much of this \$2 million is respent with local businesses or transferred to local and county governments in the form of taxes.

Payroll alone doesn't tell the whole story, though. In addition to the wages and salaries that are represented in the payroll figure, winemakers compensate employees in many other ways, including benefits and employer-paid payroll taxes. Although only a few of the winemakers surveyed provide benefits to their employees, this still represents a significant economic contribution to the region but one that is not easy to quantify. Finally, the payroll total mentioned above does not include proprietor income. Unfortunately, information on proprietor income was also difficult to obtain, both due to the organizational structures of most of these entities (Limited Liability Corporations or S-Corporations) and to the fact that few winemakers disclosed these figures.

Proprietor income and all types of employee compensation (wages/salaries, benefits, employer-paid payroll taxes) together make up *total labor income*. The total labor income contributed by Verde Valley winemakers is conservatively estimated at almost \$2.2 million, almost surely an undercount due to the reasons mentioned in the previous paragraph.

Expenditures

| | |
|---|-----------------------|
| Total Business-to-Business Expenditures: | \$ 6,565,300 |
| (2010 estimate): | (~\$ 7,681,400) |
| Capital Expenditures (FY09-10): | ~ \$ 3,000,000 |

In addition to the money or other value that flows from winemakers to *people*—the paychecks and benefits provided to employees, along with the income proprietors generate—a great deal of money flows to other *businesses*, as well. These business-to-business expenditures

totaled over \$6.5 million during the study period, and are estimated to be over \$7.6 million during 2010.

We term these expenditures *backward linkages*, as the money flows “back” to supplier firms that provide inputs to the winemaking process. For example, vineyards make expenditures on inputs like rootstock or fencing material that they need in order to produce a crop; wineries spend money with coopers, bottle manufacturers, trucking companies, vineyards and many others in order to create their product.

The survey results also show that at this point in time winemakers are still purchasing a majority of their inputs (by value) from outside the local region. In fact, only 38% of these expenditures were made locally. Obviously, items like oak barrels or corks aren’t manufactured locally. However, in many cases winemakers are already purchasing other pieces of equipment or supplies, as well as a variety of services (construction, legal, insurance, banking, etc.) locally. In addition, as the industry continues to grow, more and more suppliers may spring up in, or relocate to, the Verde Valley. As this happens, the percentage of business-to-business expenditures that stays in the region will also increase.

Both concepts—backward linkages and local purchasing—are important when estimating the “spill-over” effects caused in other parts of the economy by the winemakers’ activity. We’ll discuss these concepts in subsequent sections.

Interestingly, during the study period, a large proportion of these business-to-business expenditures could be considered capital expenditures: roughly \$3 million. As winemaking in the Verde continues to expand, it’s obvious that much of the revenue earned is being reinvested to prepare for future growth. However, it’s also clear when comparing expenses to revenue (revenue is discussed in a later section) that a great deal of additional capital—whether from the

proprietors themselves, financial institutions or investors—continues to flow into these winemaking businesses, as well.

Taxes

Verde Valley winemakers also make important economic contributions to governmental entities. The primary way they do this is through the myriad of taxes that they pay to local, county, state and federal governments: property taxes, payroll taxes, income taxes, transaction privilege (sales) taxes, excise taxes and luxury taxes.

Unfortunately, it was difficult to collect information on ALL taxes paid; in particular, few data on property taxes and income taxes (state and federal) were reported and it's not always easy to estimate those figures, either.

However, we attempted to do just that with the data available. If not reported, we utilized information on the volume of wine produced to calculate federal excise and state vinous luxury taxes, payroll totals to calculate payroll taxes and revenue to calculate sales tax. However, the result is definitely a conservative figure due to the many missing data points.

The last column of *Figure 5* gives the estimates of tax contributions (direct, indirect and induced contributions will be explained later). The total estimated tax contribution to local and state governments is at least \$739,000. Federal excise taxes (see *Figure 7*) are estimated to be \$57,900.

It should be noted, also, that there are many affiliated industries that generate revenue—and the associated sales taxes—from wine. These substantial sales taxes will be described in later sections.

the 2009 Crush and expansion into new markets is proceeding). Rather, it appears that winemakers continue to invest their own money, bring in additional funding and reinvest revenue in order to make capital expenditures (~\$3 million of the total) to prepare for that growth.

Source of Revenue

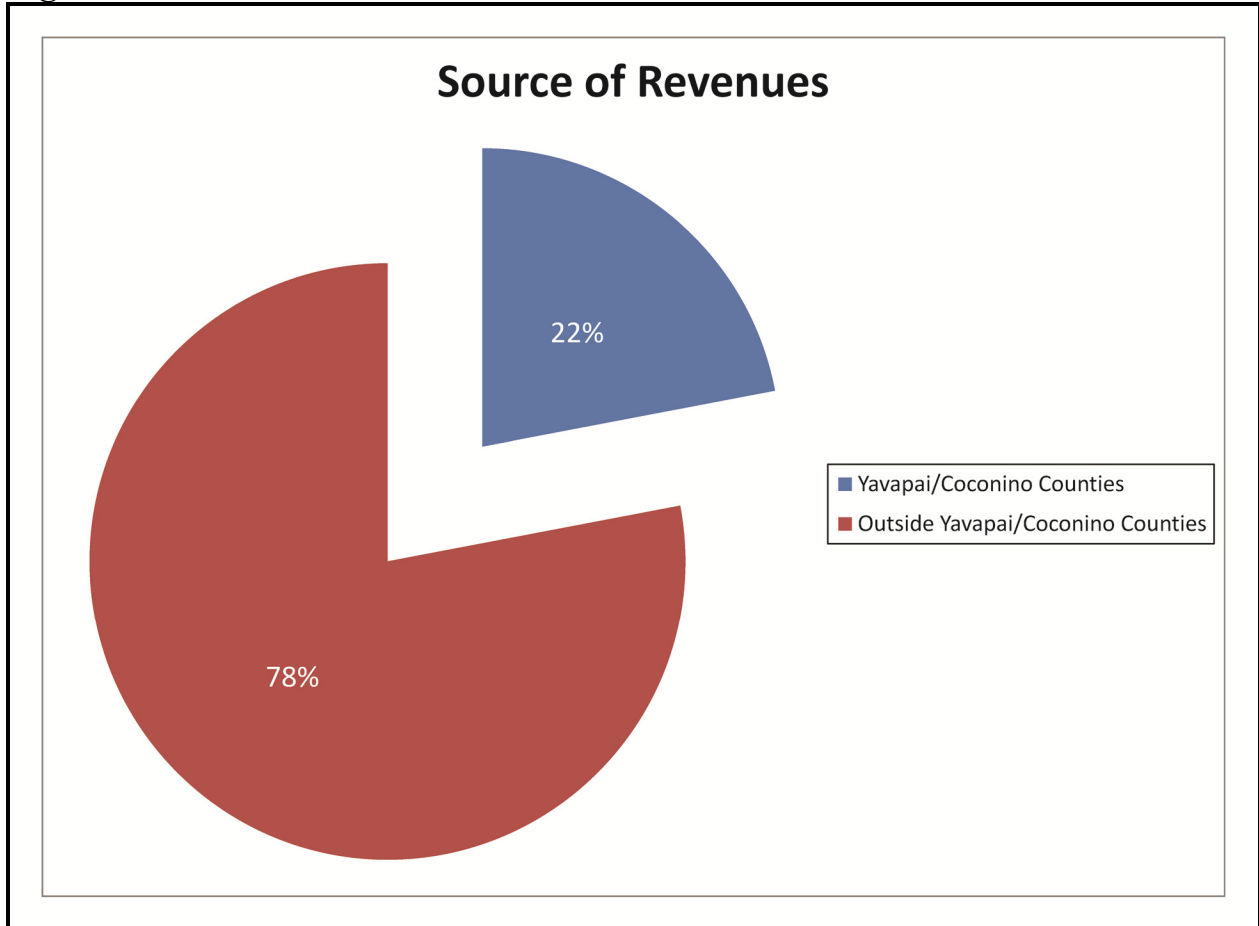
We can describe total revenue in more detail by calculating where it comes from: either inside or outside of the local region. Earlier in this report, when talking about the locations of the vineyards, wineries and tasting rooms, as well as where employees live, we defined the local region as the Verde Valley itself. In this and later sections, we define the local region as Yavapai and Coconino counties. We do this to better capture and describe all of the ways that Verde Valley winemakers contribute economically to other local industries.

Figure 4 graphically displays the breakdown between revenue that originates in Yavapai and Coconino counties and revenue that originates elsewhere. It should be noted that money is constantly circulating around the globe; the only true “origin” is the printing press or the mint. In this case, we describe the source of revenue based on the residence of the first purchaser. We would consider a wholesaler located in Phoenix that sells to a retail store in Prescott as non-local, and a Japanese tourist who buys a bottle from a tasting room in Jerome would also be considered non-local.

Using that definition, it’s apparent that almost 80% of all revenue is non-local. Whether the customer is a tasting room visitor driving up from Phoenix or a wholesaler, a restaurant in Bisbee or a couple in New York ordering over the internet, Verde Valley winemakers bring new money into the region, and this is extremely important to the local economy. It also means that the

potential market for Verde Valley wines (and related products) is much larger than it would be if customers were primarily local.

Figure 4—Source of Revenues



Multiplier Effects

As mentioned above, economic contributions can have “ripple effects” that extend into other industries and to households. For example, a winery may buy a tractor from a dealer; that dealer may use the money received to buy another tractor from the manufacturer, but may also pay an accountant or pay its employees.

Community economists often utilize a broad category of models/techniques called *input-output analysis* to examine these ripple effects. Input-output analysis estimates economic change based on the assumption that production in a region is made up of linked firms that interact with each other. If production in one sector or industry increases, that directly affects how much they can buy from the supplier firms that provide their inputs. Input-output analysis can provide estimates of *multipliers* that indicate how a change in demand for a product or service can affect the entire local economy; therefore, those ripple effects are often called *multiplier effects*. We can create multipliers and calculate multiplier effects for output, income and employment, among others.

When describing multiplier effects, we often break them up into three categories: direct, indirect and induced. *Direct effects* are those created by the firm or industry itself; in our case, all of the survey data collected about the vineyards, wineries and tasting rooms themselves are direct effects. *Indirect effects* are those caused by winemakers' spending with their suppliers. *Induced effects* are those caused by the spending done by winemakers' employees. Multipliers describe the relationship between the direct effects and the indirect and induced effects. We calculated the indirect and induced effects by using our survey data as inputs to IMPLAN, a well-known input-output model. As mentioned earlier, the concepts of backward linkages and local purchasing are important when constructing an input-output (i-o) model and analyzing its results. First, i-o models only analyze backward linkages, so they don't explicitly track intermediate economic contributions that might occur between the winery and a final consumer, e.g. at a wine bar. Second, both the way we define our local study region and our calculation of the percentage of expenditures made within that local region are important because i-o models

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normally only report indirect and induced effects within the local region; all of the direct effects collected by survey are considered local since the winemakers are all located in the local region.

So, *Figure 5* displays direct, indirect, and induced contributions for a variety of measures: employment, labor income, value added, output and taxes. Employment is given as headcount figures, not full-time equivalents. Labor income, as described earlier, is the sum of any proprietor income and all types of employee compensation (wages/salaries, benefits, employer-paid payroll taxes). Output is simply the sum of gross sales.

**Figure 5—Primary Local Contributions
(Yavapai & Coconino Counties)**

| Type | Employment (Headcount) | Labor Income ¹ | Value Added ² | Output ³ | Taxes ⁴ |
|-----------------|---------------------------|---------------------------|--------------------------|--------------------------------------|-------------------------------------|
| Direct Effect | 124 | \$2,178,600 | \$2,600,500 | \$5,448,000 (~\$5,992,800) | AT LEAST \$359,600 |
| Indirect Effect | 8 | \$377,700 | \$626,600 | \$1,923,000 (~\$2,115,300) | AT LEAST \$215,700 |
| Induced Effect | 10 | \$389,400 | \$699,000 | \$1,077,500 (~\$1,185,300) | AT LEAST \$164,000 |
| Total | 142 | \$2,945,700 | \$3,926,100 | \$8,448,500 (~\$9,293,400) | AT LEAST \$739,300 |

- 1) Labor income includes employee compensation (wages & salaries, benefits, employer-paid payroll taxes) plus proprietor income.
- 2) Value added is a measure of net economic activity or new value generated, i.e. the value of all outputs minus the value of all inputs.
- 3) 2010 estimates are given in parentheses. All other figures are for FY09-10.
- 4) In addition to many local and county taxes, these figures also include many state taxes, so the contributions aren't strictly local. However, the figures are decidedly conservative, as data on both income and property taxes were a) often not reported and b) difficult to estimate when not reported.

Two columns require more detailed explanation. First, in the taxes column, the amount reported as the direct effect does include some taxes paid to the state of Arizona, so it is not strictly local only. Second, the *value added* column describes net economic activity or new value

generated, i.e. the value of the final product minus the value of all inputs. These figures are important because they are more like traditional economic accounting, where only the value of the final products/sales is reported. By contrast, measures (like output) in input-output analyses measure the value of EACH transaction (sale) and sum them. For example, if a winery spends \$10 on grapes and other inputs and sells the wine created for \$18, total output would be \$28 while value added would be \$8. Both output and value added can provide useful information depending on the needs of the user.

Contributions to Arizona's Other 13 Counties

Total Economic Contributions to Rest of State: \$ 870,000
(2010 Estimate): (~\$ 957,000)

The indirect and induced contributions listed in *Figure 5* (with the exception of taxes) are local, meaning they affect Yavapai and Coconino counties. However, we know that Verde Valley winemakers' economic activity affects other parts of the state, as well. For example, they may hire an advertising firm from Phoenix or pay property taxes on a vineyard in Santa Cruz County; in addition, if one of their employees lives in Willcox and spends most of her paycheck there, there are significant induced effects. We estimate that total indirect and induced output in Arizona's other 13 counties during the study period was \$870,000, or approximately \$957,000 in 2010. In addition, another seven headcount employees statewide are supported by the activity of Verde Valley winemakers.

Affiliated Industries

Additional Local Revenue from VV Wine Sold: \$ 1,172,000
Additional Local Revenue from Tourism: \$ 14,014,000

As mentioned earlier, input-output analysis only looks at backward linkages. What about forward linkages where wine moves through wholesale and retail channels? How about other industries/businesses that generate revenue from wine tourism?

Forward linkages include industries like wholesale trade, warehousing, truck transport between wholesalers and retailers, wine and liquor stores, grocery stores, caterers and all eating and drinking places (restaurants, bars, etc.). Although the economic contributions to these industries due to Verde Valley wine are hard to estimate without surveying these establishments directly, we estimate that at least another 11 headcount employees are supported directly or indirectly through additional wholesale and retail sales of Verde Valley wines within the local region. In addition, we estimate that almost \$1.2 million in revenue/output is generated through these channels.

In addition to forward linkages, wine tourism-related impacts are significant, but again, hard to quantify. Wine tourists spend money in several other industries, including lodging places, gas stations, convenience stores, eating and drinking places, tour companies and many other retail stores.

Tourism related to the Verde Valley wine industry results in estimated revenue of more than \$14 million in Yavapai and Coconino counties. This does not include tasting room and tour-related business at the wineries, just the hotel, restaurant and other business generated.

Figure 6 and Appendix I describe how this estimate was made. From direct surveys, we calculated that there were approximately 286,000 visits to Verde Valley wineries and tasting

rooms during the study period. Assuming these customers visit an average of two wineries/tasting rooms per trip, and using our survey data that indicates 83% of visitors live outside the study region, we estimate that there were 118,700 tourists from outside the study region who visited Verde Valley wineries/tasting rooms during the study period.

Figure 6—Tourism and Expenditures

| | |
|--|---------------------|
| Total Visits to Tasting Rooms ¹ | 286,000 |
| Total Tasting Room Visitors ² | 143,000 |
| Visitors from Outside the Region (“Tourists”) ³ | 118,700 |
| Average Expenditure per Tourist per Trip ⁴ | \$139.12 |
| Total Tourist Expenditures | \$16,514,000 |
| (less direct spending at tasting rooms) ¹ | (\$2,500,000) |
| Total Other Local Tourism Expenditures ⁵ | \$14,014,000 |

1) Estimate. Source: author interviews.

2) Estimate of total visitors to the region assuming an average of two wineries per tourist trip. Source: author interviews.

3) Estimate of tasting room visitors who live outside Yavapai/Coconino counties. Source: author interviews.

4) Estimate based on methodology and visitor spending profiles used in *Verde Valley Tourism Study* (2008, Arizona Hospitality Research and Resource Center, Northern Arizona University). Average expenditure per trip based on survey data (amount spent per category, e.g. lodging, restaurant/bar, etc.) and author’s calculation of the percentage of all visitors who reported spending money in each category. Results indicated an average trip length of two days and an average party size of 2.6.

5) Estimate of additional spending (i.e. in addition to tasting room spending) in Yavapai and Coconino counties by wine tourists from outside the region.

Utilizing research conducted by Northern Arizona University’s Arizona Hospitality Research and Resource Center, and assuming spending by wine tourists is similar to spending by Verde

Valley tourists in general, we estimate an average expenditure of \$139.12 per person per trip. Applying that figure to our survey results, we estimate wine-related tourism contributes an additional \$15.7 million to the economies of Yavapai and Coconino counties (\$14.5 million in output and \$1.2 million in tax revenue). These figures do not include contributions from wine purchased or other money spent with the winemakers themselves (which is covered under direct output).

Tourism directly related to the wine industry employs approximately 157 people in the study region and another 38 through indirect and induced effects (see *Figure 7*). Again, this is in addition to employees of tasting rooms or other winery hospitality; they are covered under wine industry direct employment.

It should be noted that Northern Arizona University is currently conducting a more detailed study on Verde Valley wine tourists and their spending patterns, specifically. Once that study has been completed, the more accurate expenditure data collected can be used in place of the estimates reported here.

Finally, there is another industry related to winemaking that has begun to make its own economic contributions in the region: education/workforce development. In particular, Yavapai College has already spent money to develop and staff a viticulture/oenology program and offer additional courses on wine appreciation and other topics. In addition, it has planted a one-acre vineyard and procured equipment and supplies in order to utilize that site for its programs. Unfortunately, those economic contributions are outside the scope of this report. However, they are significant and will continue to grow over the next several years, so they definitely bear mentioning here.

Summary of Economic Contributions

Total Statewide Economic Contributions: \$ 24,973,500

Figure 7 describes the total economic contributions—direct, indirect and induced—made by Verde Valley winemakers to the state of Arizona. When including primary local contributions, local forward linkages, other local tourism contributions, and indirect and induced contributions to the rest of the state, we estimate total statewide economic contributions of over 350 headcount employees and almost \$25 million in output.

Figure 7—Total Statewide Contributions, FY09-10

| Type | Employment (Headcount) | Taxes | Output |
|---|------------------------|---------------------------------|---------------------------|
| Total Primary Local Contributions (from Figure 5) | 142 | AT LEAST \$739,300 | \$8,448,500 |
| Local Forward Linkages | 11 | \$76,200 ¹ | \$1,172,000 |
| Other Local Tourism | 195 | \$1,191,000 ² | \$14,483,000 ³ |
| Remainder of State (Indirect & Induced) | 7 | \$172,900 ⁴ | \$870,000 |
| Total Statewide Contributions ⁵ | 355 | AT LEAST \$2,179,400 | \$24,973,500 |
| <i>Federal Contributions</i> | <i>N/A</i> | <i>\$57,900 ⁶</i> | <i>N/A</i> |

- 1) Using an average transaction privilege (sales) tax rate for Yavapai and Coconino counties.
- 2) Using an average transaction privilege (sales) tax rate for municipalities in Yavapai and Coconino counties.
- 3) Output deflator applied to original expenditures; result includes indirect and induced effects.
- 4) In addition to indirect and induced effects, this tax figure includes some direct effects from payment of property taxes in other counties.
- 5) These figures are for the state of Arizona only.
- 6) Includes excise taxes only. In fact, total federal tax effects approximately net out to zero. The most recent available data show that, for all federal taxes as a whole, Arizona is a recipient state; for every dollar in federal taxes paid, \$1.19 is returned to the state in the form of federal expenditures. Source: 2005. Tax Foundation Special Report No. 158, “Federal Tax Burdens and Spending by State,” and U.S. Census Bureau’s Consolidated Federal Funds Report.

Opportunities and Challenges

Although the primary purpose of this report is to detail and quantify the economic contributions of Verde Valley winemakers, this section contains a quick list of selected strengths of the industry and opportunities it can take advantage of, as well as a few challenges it faces now or could face in the future without public, financial and legislative support.

Strengths/Opportunities

As detailed in this report, winemaking in the Verde Valley is healthy and growing. Here are some additional positive items to consider:

- Much like Oregon and other states, Verde Valley winemakers are focused on high quality, not large quantities. Therefore, they are less vulnerable to price-based competition from low-cost, high-volume producers around the world.
- In fact, Verde Valley wines, and Arizona wines as a whole, are beginning to receive greater recognition for their quality and value.
- Winemaking is a great industry for rural areas, especially those with an existing agricultural base and culture.
- In particular, wine and grapes are long-term investments and long-term employers. Not only are the investments long-term but they are inherently tied to “place”: a particular location, soil, landscape and aspect. Unlike manufacturing or service enterprises, vineyards, once planted, cannot simply get up and move to another country which might offer cheaper labor, a better business climate or tax incentives.
- Winemaking is also an environmentally-sustainable practice that preserves open space.
- There is a growing interest in Arizona, and northern Arizona specifically, in locally-produced food products.
- Across the country, wine consumption continues to increase. In particular, there is a growing demand among younger segments of the population.
- The health benefits of wine (red wine in particular) are increasingly touted.

The Economic Contributions of Verde Valley Winemaking

- Over the last decade as a whole, wine tourism throughout the U.S., even in states not traditionally known as wine producers, is booming. Wine tourists tend to be a higher-spending cohort and also bring in outside money to a region.
- This is part of a larger trend of increasing agricultural and culinary tourism driven by “experiential” consumers.
- Phoenix is one of the largest consumer markets in the U.S., and there is still plenty of room for expansion of sales there.
- Verde Valley wines continue to expand into the out-of-state export market, as well.
- Direct-to-consumer sales (barring future legislative changes) currently provide a way for smaller producers to avoid the traditional “three-tier” system (winery to wholesaler to retailer), utilize the internet as a marketing tool and compete on quality.
- The Verde Valley wine industry was one of the few local industries that experienced growth through the recent recession.
- As the industry continues to expand, a greater proportion of all economic contributions will stay in the Verde Valley.

Challenges

However, the wine industry does face challenges, and could face additional ones in the future:

- Grape-growing is, and will continue to be, an endeavor with significant risks. In particular, natural risks like frost, hailstorms and disease pose challenges for consistent production.
- Wineries themselves face the risks caused by a sometimes uncertain supply of grapes or juice and also face constantly-changing market risks.
- As an example, even though more than 90% of total revenues nationwide are generated through the “three-tier” system, recently several legislative challenges to the alternative system of direct sales have been introduced. If these efforts are successful, smaller producers will once again find it harder to compete with larger, more established producers.
- Currently, there is not sufficient grape production in the Verde Valley to meet the demand from local wineries. Although many wineries have sufficient supplies elsewhere in Arizona, additional local acreage is needed as production continues to

increase.

- In the past, winemakers have often had to deal with a scarcity of skilled, trained labor. However, Yavapai College and others have begun to tackle this issue by creating local education and workforce training programs for the industry.
- In some cases, winemakers have been unable to secure sufficient financing to proceed with expansion plans.
- Also, many winemakers are often hampered by government regulations, zoning restrictions or taxes.

Conclusion

Winemaking in the Verde Valley is very important to the economies of Yavapai and Coconino counties, and also contributes to the economy of Arizona as a whole. The vineyard and winery industries provide employment and a paycheck to local residents (who then respend much of their income in the region); make significant purchases with other local companies; contribute tax money to local, county and state governments; and give to charities and non-profits. They do this by creating valuable products that 1) bring outside money and people into the region and 2) can be resold or utilized by other retail and tourist-serving businesses. Perhaps just as importantly, winemakers make these many economic contributions while preserving open space and the region's agricultural heritage, serving as good neighbors in their local communities and also operating in an environmentally-sustainable manner. As we recognize these facts, it's vital that all of us support Verde Valley winemaking and do what we can to ensure that it remains a part of our region for a long time to come.

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The Tax Foundation

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Verde Valley Wine Consortium and Yavapai College

Wine America

Numerous confidential interviews by the author with industry personnel, supplemented by information from winemakers' and related firms' websites

Appendix I: Methodology

Data Collection and Supplementary Estimation

A majority of the data used in this report was collected directly from winemakers, tasting room managers and other employees. These *primary data* were collected through a series of confidential interviews, utilizing the survey instrument shown in *Appendix II* as a guide. Rarely was every question in the survey instrument answered, and some wine producers weren't interested in sharing their information. However, these direct interviews—along with some follow-up correspondence by the author—provided a wealth of information for this report.

Since the author was unable to garner 100% participation from winemakers, the collected data were supplemented by estimates—either from *secondary data* sources (data collected and compiled by others), if possible, or by extrapolating from the survey data. For example, in some cases Dun and Bradstreet and other business databases provided estimates. Remaining missing data points were filled using estimates based on averages across all winemaking operations, subsequently adjusted based on the relative size, location and makeup of the operation.

Direct, Indirect and Induced Effects

As mentioned in the body of this report, economic effects can be separated into three categories: direct, indirect and induced. *Direct effects* are those created by economic activity in the industry or industries being studied, in this case wineries, vineyards and tasting rooms. *Indirect effects* are those created by the spending that these wineries, vineyards and tasting rooms make with the firms that supply them with goods and services. *Induced effects* are those created when winery/vineyard/tasting room employees spend their paychecks on local goods and

services. The direct effects are all within the study region (Yavapai and Coconino counties), while the indirect and induced effects can be either within the region or outside the region.

The direct economic effects of Verde Valley winemaking were calculated directly from the primary data collection and supplementary estimates, as described above. The indirect and induced effects were calculated using IMPLAN, an economic model that uses input-output analyses to estimate how activity in one industry creates “ripple effects” throughout the regional and state economies.

Additional Secondary Data and Related Study Methodologies

In addition to primary data collection, supplementary estimates and IMPLAN outputs, additional information was gathered from many other agencies and organizations. In particular, the U.S. Department of Agriculture, the Tax Foundation, the U.S. Alcohol and Tobacco Tax and Trade Bureau, The Wine Institute and Wine America were great sources of supplementary data.

Finally, tourist expenditure estimates were based on the methodology and visitor spending profiles of the *Verde Valley Tourism Survey* conducted by Northern Arizona University’s Arizona Hospitality Research & Resource Center in 2008. In that survey, the average expenditures per trip were based on survey data (amount spent per category, e.g. lodging, restaurant/bar, etc.) and the percentage of all visitors who reported spending money in each category; results indicated an average trip length of two days and an average party size of 2.6. Calculations by the author using those spending data resulted in an average expenditure per person per trip of \$139.12. See *Figure 6* and its associated footnotes for additional information about the methodology used to calculate expenditures by wine tourists, specifically.

Appendix II: Survey/Interview Instrument

2010 ARIZONA WINEMAKER ECONOMIC IMPACT SURVEY

Grape Grower & Winemaker Questions

1. Do you grow your own grapes? (If the answer is no, please skip to Question 6).
2. What products are your grapes used/produced/sold for?
3. How many acres do you have planted in grapes? By varietal? How much is for other uses?
4. In the last year, how many new acres were planted? Removed? How much did it cost per acre to develop/plant?
5. What is the value (price per ton? other?) of your grapes?
6. From what sources do you get your wine grapes (locations, growers, vineyards)?
7. Do you produce your own wine? If not, who does? Where is it produced?
8. How much wine do you produce each year (barrels, bottles, tons, liters)?
9. Do you crush your own grapes? If not, who does? Where?
10. Do you bottle your own wine? If not, who does? Where?
11. What varietals/blends of wine are produced at your winery? What are the percentages of each?
12. Do you grow any other agricultural products? How many acres of each?
13. Do you produce any other alcoholic beverages?

Winery Owner Questions

1. When did you purchase the land your winery is located on?
2. What kind of ownership structure do you operate your vineyard and/or winery under (ie. partnership, sole proprietorship, limited liability corporation, etc.)?
3. How many proprietors or owners are there for your vineyard and/or winery?
4. What year did you open your vineyard and/or winery?
5. How large is your vineyard and/or winery in acres?
6. Do you have any land under development for grape production, buildings, etc.?

Employee & Ownership Questions

1. How many people do you employ on a full-time basis?
2. How many people do you employ on a part-time basis?
3. How many hours per week do the part-time employees work?
4. How many people do you employ on a seasonal basis?
5. How many weeks (or months) out of the year do those seasonal employees work for you?
6. What is your total payroll?
7. Do you offer benefits to your employees? If so, what kind?
8. Where do your employees live (by community or zip code)?
9. If construction activity has occurred within last year (or is ongoing), how many construction employees did you hire? How many hours? Cost? (**If paid contractor directly, calculate this under expenses.**)

Tourism Questions

1. How many tourists visit your winery/tasting room (annually, monthly, or weekly)?
2. Can you estimate what amount (or percentage) of sales you generate from tourists on-site?

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3. Where are your on-site tourists from? (break down by Verde V., other N. AZ, Phx, Tuc, rest of state, other U.S., international; estimate if necessary)
4. How long do tourists to your vineyard and/or winery stay in the area and where? (estimate)

Distributor Questions

1. Who are your distributors (wholesalers and retailers)?
2. Where are they located?
3. How much of your product goes to each distributor?

Sales & Revenue Questions

1. What was your total annual revenue over the last 12 months?
2. What are the sources of this revenue (wine-grapes, wine, etc.)?
3. How much has your revenue grown (since beginning, in last year, in last five years)?
4. What are the sources (and percentages, by type) of your revenue? (sales, rents, investments, services provided, etc.)
5. How are your sales allocated, by percentage? (direct in tasting room, direct-to-consumer by mail, other retail, special events, wholesalers, export)
6. Where are your off-premise customers located (Verde V., other N. AZ, Phoenix area, Tucson area, the rest of the state, the rest of the U.S., international)?
7. How much does your average bottle of wine cost?
8. How much does your most expensive bottle of wine cost?
9. How much does your least expensive bottle of wine cost?

Suppliers, Expenses & Spending Questions

1. How much did you invest in developing your acres for wine production in the last year?
2. How much did you spend in the last year on maintenance and repair? Farm & vineyard equipment? Crush & press equipment?
3. How much did you spend in the last year on vineyard development/plantings? Removals?
4. How much did you spend in the last year on barrels?
5. How much did you spend in the last year on stainless steel tanks?
6. How much did you spend in the last year on glass, corks, closures, and packaging? (Separate these out)
7. How much did you spend in the last year on wine labels and other printing?
8. How much did you spend in the last year on winery and vineyard chemicals, gases, sprays, fertilizers, and other miscellaneous supplies?
9. How much did you spend in the last year on shipping?
10. How much did you spend in the last year on trucking/distribution?
11. Do you use any grapevine nurseries? If so, how much did you spend with them in the last year? (Where are they?)
12. How much did you spend in the last year on research, testing, education, etc?
13. How much did you spend in the last year on charitable contributions?
14. How much did you spend in the last year on legal/compliance issues or services? (types?)
15. How much did you spend in the last year on banking, finance, or insurance services? (types?)
16. How much did you spend in the last year on consulting/professional services? (types?)
17. Are there any other major expenses we haven't yet covered?

Tax & Regulation Questions

1. How much did you pay in taxes in the last year?
2. How much of various types of taxes do you pay? (Sales, excise, payroll, property, state income—corporate and/or personal)
3. How much did you pay in the last year for fees and licensing?
4. Did you pay dues to the state wine association in the last year?
5. Are there any other fees or dues (licensing, taxes, etc.) that we haven't covered?

Other Questions

1. What kind of agricultural practices do you utilize in production of your wine-grapes and other agricultural products (organic, other practices)?



Source: *Photography by Janise Witt.*