BUSINESS DEVELOPMENT NEEDS OF THE WINE INDUSTRY IN THE YADKIN VALLEY, SWAN CREEK, AND HAW RIVER VITICULTURAL AREAS

A RESEARCH REPORT(#)

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(#) A copy of this report is available online at *http://www.uncg.edu/bae/or*

Acknowledgement

This study was made possible by the support of several organizations and their representatives. In particular, the research team expresses its gratitude to:

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Executive Summary

The winegrowing industry in the Piedmont Triad Region and its adjacent counties is in its nascent stages but growing fast. It is also a part of an increasingly important sector in the state economy. A 2006 Economic Impact Study of Wine and Wine grapes in North Carolina (NC) concluded wines produced in the state contributed $317 million in state revenues in 2005. The economic footprint of this sector is substantial: 5,700 wine-industry related jobs, wages estimated at $67.9 million and a total economic impact estimated to be $813 million[1].

With the above as a background, a team of researchers from UNCG and NC A&T State University came together in January 2008 to conduct research on ways and means to help the nascent but fast growing winery industry in NC, especially those in the Yadkin Valley, Swan Creek, and Haw River wine growing regions. The researchers sought to answer three basic questions:

1. What is the profile of the industry?
2. What are the primary barriers to profitability in the industry and what could be done about them?
3. What would a "business development center" for the wine industry (e.g. NC Center of Viticulture and Enology at Surry Community College) need to know in designing its programs and services?

This report is the result of a yearlong research project to profile the wine sector in these viticultural areas and assess the business development needs. Along with the wineries, the research study also included the smaller sized industry sector comprised of grape growers.[2]

<u>Key Findings</u>

1. The industry fits the classic definition of being in its entrepreneurial stage. The overwhelming majority of the wineries are small, young, and self-financed.

2. Vitis vinifera is the most commonly grown variety by wineries with a small percentage of acreage being devoted to muscadine and vitis lambrusa. Grape growers devote a significant amount of acreage to muscadine. Regardless of the grape variety however, the overwhelming share of the wine produced by these wineries is from grapes grown on premises lending validity to the claim that the wine sold from these viticultural areas is locally produced.

3. The two biggest constraints to the growth in profitability in this industry are as follows:

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[1] http://www.nccommerce.com/en/CommunityServices/FocusedIndustrySupport/GrapeWineCouncil

[2] For purposes of this report, "grape growers" refers to farmers who grow grapes but do not produce wine.

(a) A critical shortage of time for winery owners, with marketing and distribution activities contributing substantially to this scarcity especially for those wineries that self distribute.
(b) Financial management – especially managing a positive cash flow balance.

Further, *independent* of size of the winery and its total production, *cash flow* problems remain an important barrier *independent* of size of the winery and its total production; thus, our conclusion is that wineries cannot expect to "grow" their way out of this barrier.

The **sole factor** that has an impact on reducing the effect of cash flow problems as a barrier is the usage of a distributor by the winery. Wineries that use a distributor report being less hampered by cash flow problems than those that choose to self-distribute.

4. Notwithstanding the beneficial effect of using distributors to market their wines (see finding #3 above), wineries that do not use distributors not only have serious misgivings about using them but also are fearful of the level of commitment they will receive from the distributors if they do partner with them.

5. Winery owners feel that there are excessive government regulations that burden their operations. These range from regulations related to treatment of wastewater, a byproduct of producing the wine, to those imposed by Department of Transportation on posting signage.

6. Within North Carolina, there is a critical need for widespread education and marketing of NC wines. This includes education of winery owners in best practices; educating state citizens, especially legislators and locally elected officials, about wines in general and more importantly, the need to support the wine industry as a critical tool of economic transformation in the state. In addition, the marketing and branding of NC wines should emphasize that North Carolina wines are "*locally produced, hand-crafted*" products.

7. There is a need for an effective business development center dedicated to the wine industry in NC akin to the proposed NC Center for Viticulture and Enology at Surry Community College (Dobson, NC). In particular, smaller wineries that self-distribute express a special need for it. Broadly speaking, the subjects/topics that are most pertinent to help these wineries are in the areas of time and cash flow management, accounting and marketing. Finally, the wineries would like the center's services to be accessible to those not located in its vicinity (e.g., online curriculum).

8. The grape growing industry in these viticultural areas is also in its entrepreneurial stage, but smaller and newer than the winery industry. A vital opportunity exists for an enhanced supply-chain partnership between the winery and the grape growing industries.

Key Recommendations

1. The state legislature should ensure that there is consistent state support for the wine industry through the following:

    (a) Enact a statewide regulation that ensures the **use of NC wine at all state-supported events** where alcoholic beverages are allowed.

(b) Undertake a study of the complete regulatory landscape governing the NC wine industry and how these regulations compare to their counterparts in other prominent wine-producing states such as Virginia, California, Oregon, Washington, and New York. This will better inform and advise state legislators on how to best regulate this nascent industry while encouraging its sustained growth.

(c) Develop incentives and programs that support domestic and international market development efforts of NC wines.

(d) The NC Wine and Grape Council should consider (enhancing) investment in the following:
   (i) educating state citizens, especially legislators and locally elected officials, on NC wine, its importance in economic transformation of the state and its economic impact;
   (ii) branding and marketing NC wine as a "*locally produced, hand-crafted*" product;
   (iii) building an accessible database that contains the "best practices" in viticulture and enology that can be used by winemakers and grape growers statewide;
   (iv) conducting viticulture research leading to growing grapes that are more tolerant of high humidity and resistant to mildew.

2. Develop an organizational structure that facilitates the ability of smaller wineries to utilize the services of distributors who are **committed** to promoting North Carolina wine. This facilitation can be achieved by state agencies (e.g., NC Department of Commerce), economic development offices, alliances of small wineries, or a combination of the above. Effective use of distributors is an important tool in impeding the constraints on profitability placed by scarcity of time and cash flow problems.

3. Promote and develop an enhanced collaborative relationship between groups of established wineries and grape growers. Established wineries should look into forming collective business alliances/partnerships with grape growers, especially those located within their respective viticultural area, much as large corporations do with their supply-chain partners. Effective supply chain partnerships have the potential to allow wineries to increase their production without affecting quality. Such facilitation can be done by state agencies (e.g., NC Wine and Grape Council and NC Department of Agriculture), economic development offices, alliances of small wineries, or a combination of the above.

4. Address the scarcity of time issue faced by winery owners through the outsourcing of non-core activities and the usage of technology tools that efficiently facilitate time and cost management as well as product management.

5. Develop, primarily through the NC Center for Viticulture and Enology at Surry Community College, an accessible (possibly online) curriculum that fundamentally addresses the development needs of the *small wineries* who *self-distribute* their wine. The curriculum and outreach services of the center must address the following subjects/areas from the viewpoint of wine making entrepreneurs: time and cash flow management, accounting (bookkeeping, cost identification, and management), marketing and distribution (market development, price setting and profitability analysis, brand management).

1. Background

The North Carolina (NC) wine industry has grown rapidly over the past decade and as is expected to grow as the worldwide wine consumption and export of wine rises. In fact, the overall growth potential for the wine and grape industry in North Carolina (NC) appears substantial and the state wine and grape industry is one of the fastest growing industries in the state. There are presently about 80 wineries and 350 vineyards covering about 1,350 acres of land across the state and currently, North Carolina has become the 10th largest wine and grape producing state in the US. Over the years, the industry has focused on growing muscadine grapes and vinifera grapes. Muscadine grapes, also known as Scuppernongs, are relatively pest resistant and thrive in the hot sandy conditions of the Coastal region. In contrast, several varieties of vinifera grapes are mainly planted in the Western and Piedmont regions of the state.

The economic impact of this sector is also substantial. In a study performed by MKF Research LLC and commissioned by the North Carolina Department of Commerce and other organizational entities, it was determined that there were $48 million in North Carolina wine sales in 2005. However, when one accounts for the 'ripple' effects of these sales throughout various related industries in the NC economy, the net economic effect on North Carolina for 2005 was $813 million.

The Piedmont Triad Region is uniquely positioned to increase its presence in this industry. Of the 80 wineries in North Carolina that are currently open to the public, nearly half are located in the Piedmont Triad Region. The Region is also home to the only American Viticultural Areas (AVA) in North Carolina: *Yadkin Valley* and *Swan Creek.* Additionally, within the next few months, the Haw River area is slated to become the next North Carolina AVA. This nascent industry, however, faces some challenging obstacles that will impede its growth if not addressed. These include the long gestation period before earning revenue from their cultivars, the uncertainty of the yield due to weather conditions, the complexity and multitude of activities that each winery is responsible for and the lack of ability to achieve economies of scale due to small size.

The Piedmont Triad Region is also the primary service area for the state's two largest regional universities, UNCG and NC A&T State University, making them uniquely positioned to assist the economic development of the region by helping to grow and enhance this nascent industry. With that as a background, a team of researchers from UNCG and NC A&T State University came together in January 2008 to conduct research on ways and means to help the nascent but fast growing winery industry in NC, especially those in the Yadkin Valley, Swan Creek, and Haw River regions. The three basic questions we sought to answer were:

1. What is the profile of the industry;
2. What are the primary barriers to profitability in the industry and what could be done about them
3. What would a "business development center" for the wine industry (e.g. NC Center of Viticulture and Enology at Surry Community College) need to know in designing its services?

The objective is to better understand the business issues related to the wine and grape industry in the Piedmont Triad region. Once established, resources can be identified to help the industry with these needs making the industry financially stronger and more competitive. While the research is primarily designed to assist the wineries and grape growers located in the Yadkin, Swan Creek, and Haw River areas, it should also benefit this fast growing industry throughout NC.

This report is the result of a yearlong research project to profile the wine sector in these viticultural areas and assess the business development needs. The remaining report is organized as follows. Section II describes the research methodology and Section III comprises the bulk of the report on survey findings about the wineries. Section IV presents the results on the grape growers and Section V presents those about the business development center devoted to the wine industry. Finally, Section VI summarizes our findings and recommendations from the personal interviews conducted in this research

2. Research Methodology

For background research to study the landscape of this sector, a thorough literature survey was done from periodicals, newspapers, and specialty industry publications. Industry officials also provided additional sources of information. Finally, information was obtained by attending and participating in the 2008 annual meeting of the NC Winegrower's Association and the 2008 Wine Summit. In addition, the research team met with key stakeholders in the NC wine industry including representatives from: The North Carolina Winegrower's Association, North Carolina Wine and Grape Council, North Carolina Department of Agriculture, North Carolina Muscadine Growers, Surry Community College, and economic development officials. The research team learned about issues in government regulations, distribution and sales, education of the public and government officials, wine quality, marketing/brand management, financing, and time management.

Based on the above, the research team developed a draft questionnaire and then field-tested it with owners of two different wineries. Their comments were incorporated into the final questionnaire – see Appendix A for a copy of the survey administered to wineries and Appendix B for the one administered to grape growers.[3]

Although it was more expensive, the research team agreed upon conducting phone interviews. Given the relatively small size of the sector, the team believed a very high response rate was needed for meaningful results. However, the questionnaire was mailed ahead of time with a letter-delineating respondent's part in the process and the importance to the industry of completing the survey.

[3] For purposes of this report, "grape growers" refers to farmers who grow grapes but do not produce wine.

The actual survey for wine producers consisted of all the 34 wineries and 24 grape growers currently located in the Yadkin, Swan Creek, and the Haw River valley regions of North Carolina; see Appendix C for the list. Thirty out of the 34 wineries and 14 out of the 24 grape growers responded to the structured questionnaire through telephone interviews, representing a high response rate of 88 percent for wineries and 58% percent for grape growers. This lends strong validation to the research results of this report.

The research team decided to analyze the survey dataset from different but complementary standpoints. As an example, one member of the research team studied the profiling of wineries and grape growers; another examined marketing/distribution issues; and yet another researched the needs of the wineries that would need a business development center.

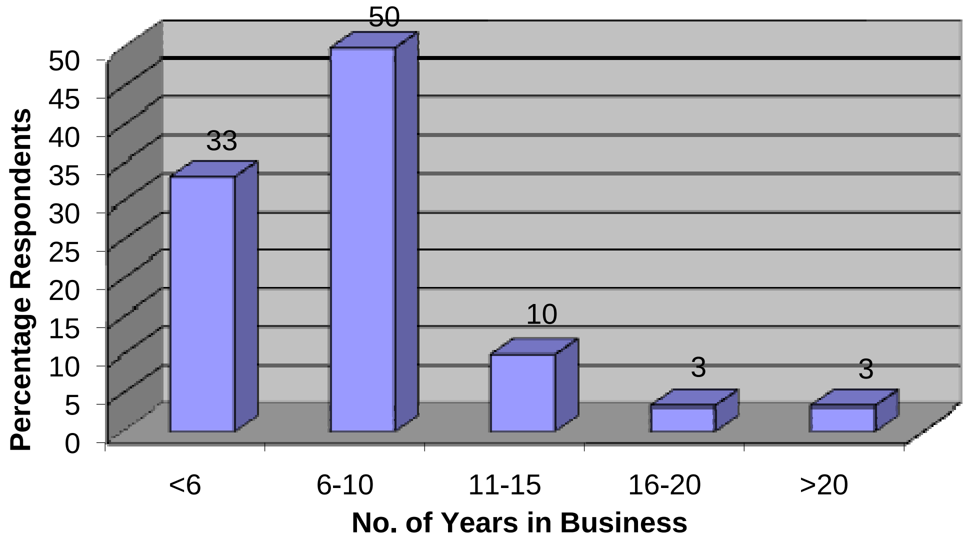
In addition to the telephone surveys, the research team held face-to-face interviews with five participants, including at least one key winery operator from each of the three viticultural areas under study. Overall, questions asked were unstructured but did follow the general outline of the written questionnaire. One question, however, was consistently asked of all interviewees, “If you (the interviewee) were made ‘king’ or ‘queen’ for a day, what specific things would you to do to enhance the growth and profitability of the NC wine industry?” This was done to provide the opportunity for a free-flowing discussion on the problems and opportunities confronting the NC wine industry. Thereafter, one group focused on the face-to-face interviews, performing the “qualitative data analysis” of the interview transcripts. To ensure elimination of groupthink and bias, it was ensured that that a person not involved in primary research reviewed the qualitative data analysis.

3. Survey Findings (Wineries)

3.1 A Demographic Overview

Thirty-three percent of the wineries have been in business for less than 6 years and exactly half of the respondents have between 6 and 10 years of experience in the winery business. Thus, a majority of the respondents totaling 83 percent have less than ten years of business experience. Only 7%, representing two wineries out of the 30, have more than 15 years of relevant business experience. Thus overall, this points to a relatively young industry.

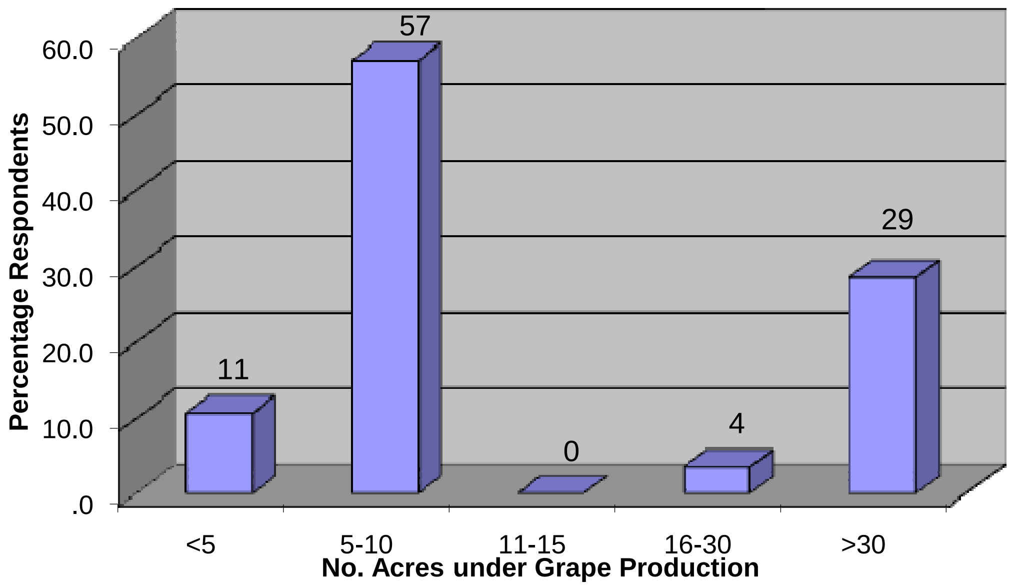
Figure 1. No. of Years Winery Has Been In Operation



All of the wineries surveyed also own vineyards. Four major varieties are grown by the respondents. Seventy-seven percent of the wineries grow Vitis vinifera, 20 percent are Muscadine growers, 17 percent grow Vitis lambrusa, and 7 percent cultivate Vitis aestivialis.

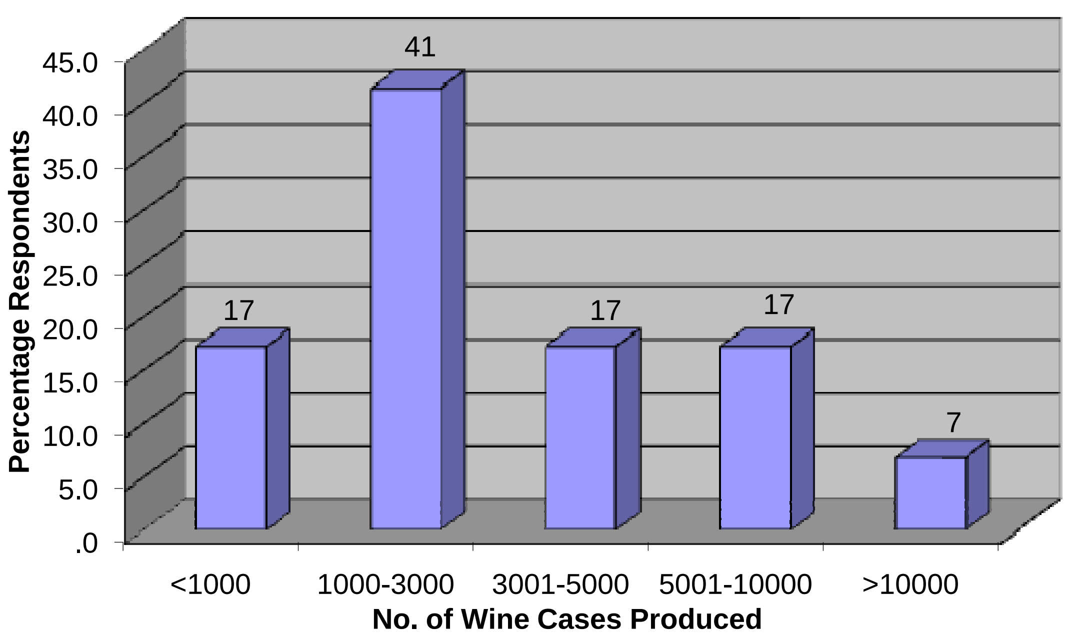
A majority of these wineries own less than 10 acres of grape farms. Fifty-seven percent of respondents have 5 to 10 acres of grapes under cultivation, eleven percent have less than 5 acres and 29 percent representing 8 out of the 28 wineries that responded to this item have more than 30 acres of grapes under production (Figure 2). The results support our conclusion that most of these wineries are small, relatively new with less experience and presently lack the ability to enhance profitability through economies of scale.

Figure 2. No. of Acres under Grape Production



The majority of wineries reported an annual production estimate of between 1,000 and 3,000 cases of wine while twenty-four percent produces more than 5,000 cases per year. See Figure 3 below for the estimated annual wine production levels.

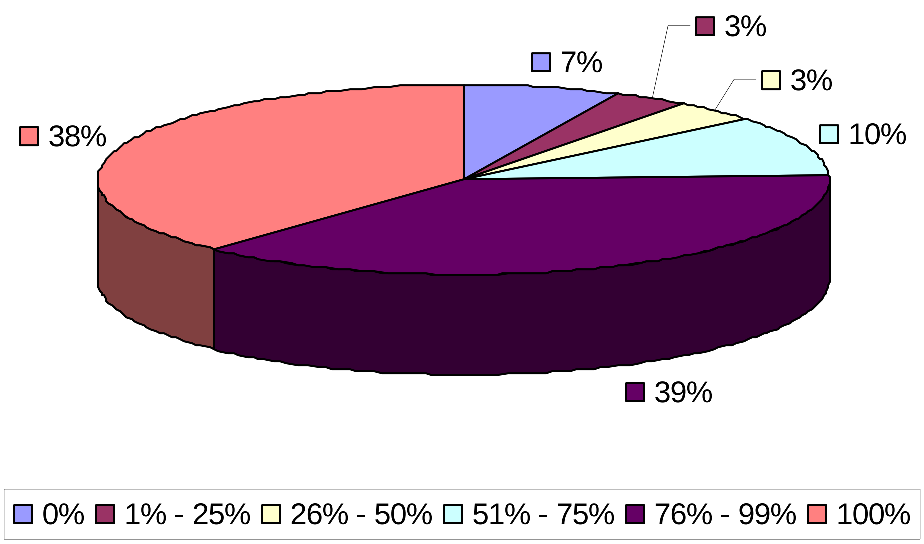
Figure 3. No. of Wine Cases Produced Annually



The survey gathered data that looked at the proportion of grapes used in wine production that is obtained from the producer's own vineyard. The results show that the majority rely substantially on their own vineyards for grapes. Thirty-eight percent of respondents produce wine solely from grapes grown on their farm. Another 38% have between 76% and 99% of the grapes used in their winery from their own vineyard. Only 14% of the respondents use less than 50% of their own grown grapes in their wine operations.

In terms of capacity utilization, 62% of the wineries surveyed produce at more than 80% of their wine production capacity with none of the respondents producing at below 50% capacity. This result indicates that most of the wineries produce their own grapes and are presently utilizing most of their production capacity.

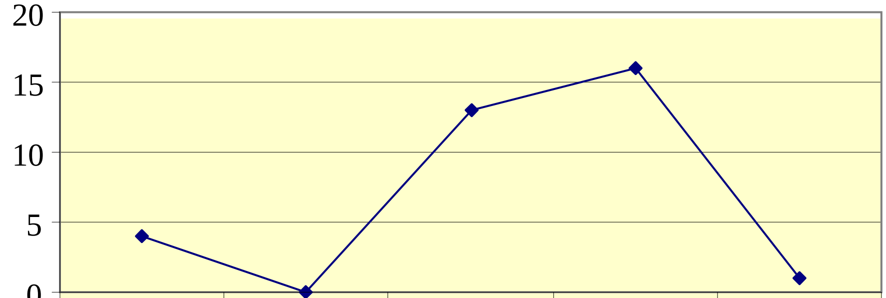
Figure 4. Percentage of Own Grown Grapes Used in Wine Production



3.2 Sources of Financing

Sixteen representing 53 percent of respondents self finance their winery and 13 wineries finance their business through the banks. Carolina Farm Credit provides financing for 4 of the wineries contacted.

Figure 5. Funding Sources



	Carolina Farm Credit	Credit Union	Bank	Self-financed	Other means of financing
Current sources of financing	4	0	13	16	1

3.3 Constraints on Profitability

This was the most salient question in the survey as is evident from its relative length as compared to the other questions in the survey. To analyze their responses, a 5-point Likert-type scale ranging from 1 (*much below average importance*) to 5 (*much above average importance*) was used to measure the opinion of respondents on the factors they perceive to be important in affecting their profitability. The mean score on the rating of factors that are barriers to the level of profitability of wineries is shown below in Table 1. As is evident, *scarcity of time, bottling costs, cash flow, and canopy management* are the four most important constraints identified.

This leads to a salient conclusion that **time and financial management** (including cost management) are the two most important issues to address if we hope to sustain a growth in profitability in the wine industry.

Table 1. Ratings of Barriers Enhancing Current Level of Profitability

Factors	Opinion Rating (Mean Score)
The scarcity of your time	3.62
Bottling costs	3.03
Cash flow	3.00
Canopy management, Pesticide (materials + application) costs	2.86
Grape cultivation equipment costs	2.55
Wine production equipment costs	2.48
Financing	2.36
Limited opportunities to distribute your wine	2.35
Price competition for your product in retail stores	2.21
Skilled labor costs	1.90
Vine costs	1.90

Relationships with grape producers	1.86
Availability of quality grapes	1.79
Availability of information resources	1.59
Wine Production Capacity	1.46
Availability of managerial personnel	1.45
Availability of labor	1.41
(Un)availability of mobile bottling lines	1.41

Given this result above, we next chose to answer the following question. Is it possible for the wineries to "grow" their way out of cash flow problems? In other words, can the wineries expect that the salience of cash flow as a constraint on increasing profitability will decrease as they grow larger.

In order to answer the question, we conducted a statistical analysis with the overall aim of determining the relationship between size (acreage or crates of winery) and cash flows of wineries. The specific objectives were

(a) To establish correlation between acreage under production and number of crates of wine produced and
(b) To determine the association between cash flow and the size, years of experience, and the percent of own- grape used in wine production.

For (a), we found that there is a significant positive correlation between acreage of grapes under production and number of crates of wine produced by the wineries and the two variables to be statistically correlated. This implies that as NC wineries plant more grapes, their wine production has grown proportionately.

However, on (b), we also found that none of the explanatory variables delineated in the second objective has an effect on the cash flow problem faced by the wineries. In other words, being larger did not necessarily imply a reduction in perception of a cash flow as a problem. This leads us to conclude that the smaller wineries cannot hope to reduce cash flow problems by simply "growing" their way out of the problem; see section III.V for another possible solution.

3.4 *Scarcity of Time*: Analysis and Recommendations

Based on the initial analysis of the input from the survey respondents presented above, it is evident that scarcity of time represents a major obstacle to attaining and sustaining profitability. Further examination of the survey results indicates that the specific activities contributing to scarcity of time issues are concentrated in the *marketing* and *distribution* of the wine product. Thus, it was decided to study both these issues at length in addressing this important barrier to increased profitability. Analysis also revealed that the activities of wine production and marketing/sales, while contributing to the success of the whole, are in effect two different elements with different time and resource requirements.

The actual production of wine as a saleable product is dependent on the cultivation and harvesting of the grapes, transport, if necessary, to the winery, wine production, and the bottling and transport of the finished product. These processes in themselves require substantial time and financial resources.

The marketing element entails an entirely different set of capabilities and demands on time and financial resources. The specific activities addressed included the operation of gift shops, use of advertising, self-distribution of the wine, and the sale of wine to restaurants. Respondents who engaged in these marketing activities indicated that they considered the time spent on marketing activities to be a constraint to increasing their profitability. Closely related are the conclusions from the data analysis that cash-flow issues constituted an impediment to profitability by those wineries that participated in festivals and fairs, and self-distributed their wine products.

The very essence of the issue appears to be the assumption by winery owners that all tasks must be performed by the wineries themselves. It is common practice in business to identify those activities that are considered to be core competencies upon which the success and identity of the firm are based. Contributing activities, which are necessary for the financial success of the firm but are not a core competency, can and should be considered for outsourcing. Engaging another entity to perform selected contributing activities constitutes a trade-off between the time and financial resources spent performing non-core activities in-house and the financial resources spent to have those activities performed by an entity for which these activities are a core competency. The objective is to reclaim time that can then be focused on the core or essential activities of the winery operation.

Restaurants and gift shops consume a number of the winery’s resources. One might try to make the case that financial and property resources do not consume time. However, the operation and maintenance of restaurants and gift shops does consume time resources. Tours and wine tasting opportunities, which are often offered in conjunction with gift shops, require a significant time investment by one or more individuals.

Advertising efforts require management’s time to ensure that the message is conveyed correctly. Even though the actual media being used may not be owned or operated by the winery, management must devote time to the administration of the total promotional effort including paid and non-paid advertising, brochures, presence at festivals and fairs, and spotlight features in various trade, tourism, and other outlets.

Efforts by wineries to engage in distribution activities were also identified as contributing to the scarcity of time. One of the difficulties when engaging in self-distribution is the relatively small quantity that is sold for the hours that are invested in the distribution process. The same imbalance of quantity sold to time invested in the distribution process is encountered when selling product to individual restaurants.

Recommendations

The identification of scarcity of time as an obstacle to achieving the level of financial success sought by winery management indicates that wineries have a need to focus more on core activities such as wine-making and less on non-core activities. Non-core activities such as marketing and distribution are perceived to be hindering the ability of the winery to engage in the more "important" activities that contribute to profit.

The results of this survey indicate that winery management recognizes that time has value. In order to make the most of the time available, management must make decisions as to whether to perform functions in house or to engage another person or entity to perform selected functions. Survey results showed that twice as many wineries with 10 or fewer acres considered the scarcity of time to be a significant barrier to profitability. Three and a half times more wineries of 16 acres or more indicated that scarcity of time was a significant barrier to profitability. The challenge facing wineries is to determine what functions to perform, and who should perform them. The obvious answer is to hire an outside entity or to engage additional personnel to perform those functions. There are possibly more creative solutions that individual wineries may chose to implement. No matter what the choice, the time is a valuable resource that must to be optimized in order to increase profitability.

Identifying the essential activities that should be performed internally is a first step in the classical make/buy decision process. In order to properly identify these activities, there must be a clear understanding of the financial and time resource "costs," profit contribution, and the impact of these activities on consumer perceptions of the quality and uniqueness of the winery's offerings. After these activities have been identified, winery management can examine other winery activities to determine the current financial and time investment being expended in-house and compare that to the costs involved in hiring another entity, either an individual or another firm, to perform those activities.

3.5 Self-Distribution vs. Using Distributors

The next step in the analysis was to look for factors that best served to distinguish the wineries in terms of their marketing, distribution and identified barriers to constraints on profitability. In that regard, we found that an important differentiator for grouping wineries was whether they *self-distributed* or used a *distributor*. Note that while some wineries used both channels to distribute their product, there was a tendency for wineries to use either one channel or the other.

To begin with, statistical analysis of the results indicate that owners of wineries that use *distributors* to distribute wine tend to be more likely to have 16 or more acres of grapes under cultivation (i.e., are relatively large) than do wineries not using this distribution method. In addition, owners of wineries that use distributors are more likely to self-finance the operations of their wineries than do the other winery owners.

Next, we found statistically significant differences in the marketing practices of these two groups of wineries. When compared to wineries that self-distribute, those that use distributors are more likely to sell product in grocery stores, use advertising as a promotional medium, promote product using festivals and fairs, and to promote product using wine clubs.

However, from the standpoint of identified barriers to profitability, we found an important distinguishing factor between these two groups of wineries. Owners of wineries that self-distribute are distinguished from owners of wineries that self-distribute with regards to the constraints to profitability that they feel are important. Wineries that use distributors indicate cash flow and financing to be a less important constraint to increased profitability that those that self-distribute. In fact, wineries using distributors indicate price competition for their product in retail stores as a more important constraint on increasing their profitability. This difference leads us to conclude from our study that the only factor that makes a difference in the salience of cash flow and financing as an impediment to increased profitability is whether a winery uses a distributor; those that do fell these two factors to be less of a burden than those that self-distribute. Logically then, this would lead us to recommend that all wineries should favor the usage of distributors over self-distribution. However, as indicated in Section VI, our personal interviews with a broad cross-section of industry principals indicate that substantial impediments exist to a widespread adoption of distributors by the winery industry in Yadkin Valley, Swan Creek, and Haw River Valley.

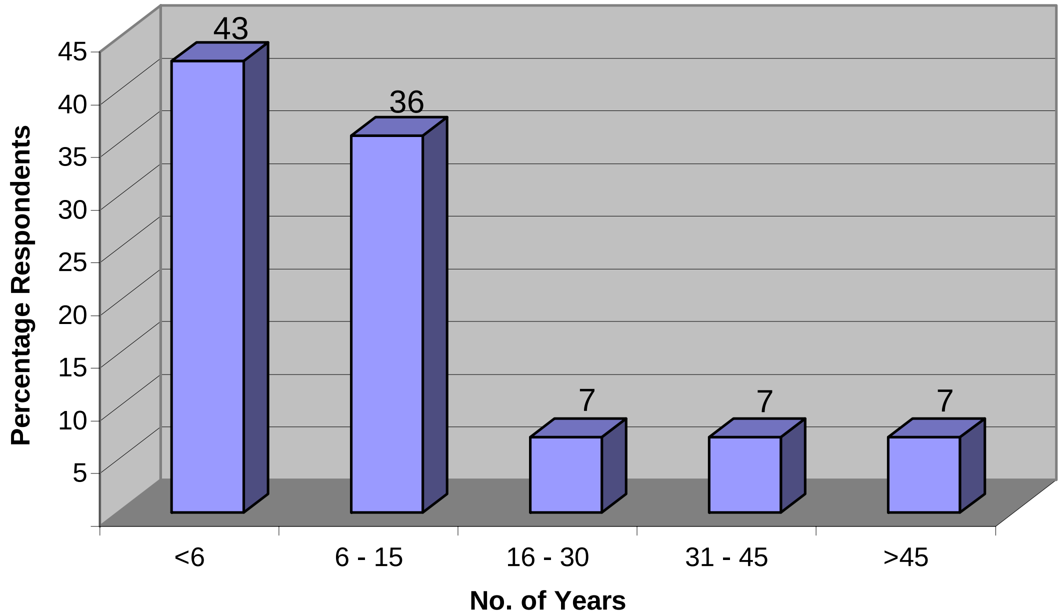
4. Survey Findings (Grape Growers)

As mentioned in the introduction, along with surveying wineries, this study also interviewed grape growers, defined as farmers that grew grapes but did not make wine. Unlike information on wineries, comprehensive information on grape growers was not readily available. The research team assembled the list through contacts available at the Viticulture and Enology program of Surry Community College and a list available at the website of NC Department of Agriculture. Based on this list, it was determined that there are 24 grape growers located in the located in the Yadkin, Swan Creek, and the Haw River valley region and all were contacted with a variant of the survey that was developed just for them (see Appendix B for a copy). A total of 14 grape growers responded to the survey, representing a rate of participation of 58 percent. As is evident, the sample size here was too small to do meaningful statistical analysis (as was done for the wineries). Hence, we present below a descriptive overview of the findings.

4.1 General Demographic Issues

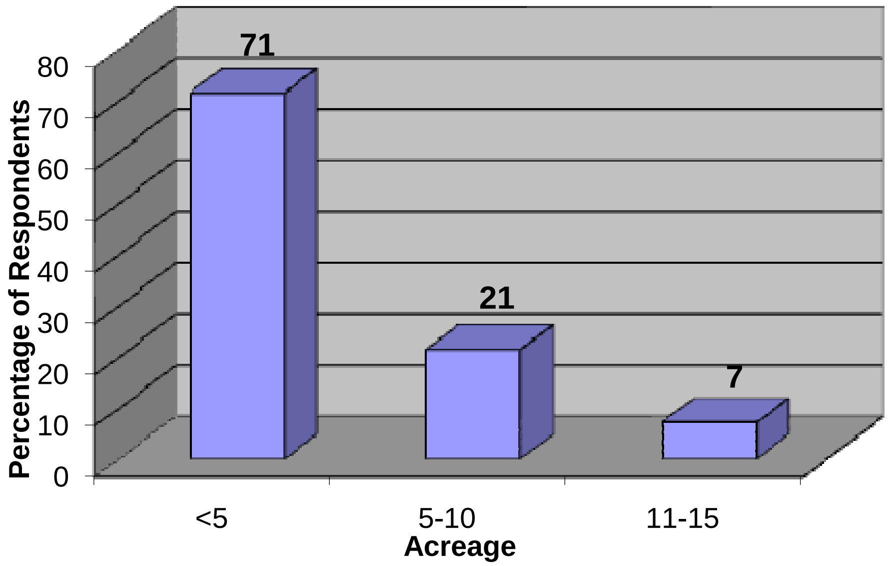
Forty-three percent of these respondents have been growing grapes for less than 6 years. Cumulatively, 79 percent have been in business for not more than 15 years and 21 percent have more than 15 years of experience in grape farming (see figure 6). Similar to the trend observed with wine producers, most of the grape farmers are relatively new and small.

Figure 6. No. of Years in Business



The survey results shows that 71 percent of the growers operate less than 5 acres of grape farm and only 7 percent, which represent one grower, has more than 10 acres of grapes (figure 7). Forty-three percent of the grape growers reported growing Muscadines (Vitis rotundifolia), 29% grow Vitis lambrusa (Niagara, Concord), 36% grow Vitis vinifera (Cabernet, Chardonnay, etc.) and 7% reported growing Vitis aestivialis (Norton). Further, 43% of the growers sell their grapes to wine producers while another 43 percent sell their grapes on-farm where buyers are allowed to "pick your own" grapes. Only one grower sells on the fresh market. Majority of these farms are small family operations managed by husband and wife. Furthermore, a couple of these small-scale producers grow grapes as hobbies and for personal use. Eighty-five percent of these grape farmers have never been members of any Wine/Grape Cooperative or similar organization. None of the growers interviewed use migrant workers in their operations. Five out of the 14 growers representing 36 percent stated that they provide the necessary training their workers. Twenty-one percent train their workers through programs offered at the local community college.

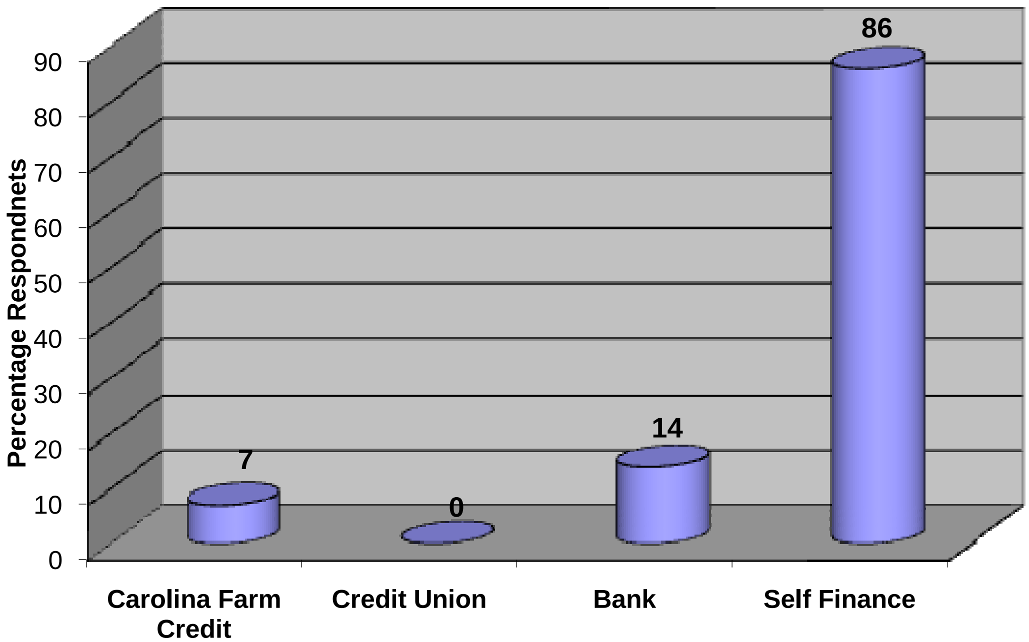
Figure 7. No. of Acres Devoted To Grape Production



4.2 Sources of Financing

Similar to results from the wine producers, majority of grape growers self-finance their operations. Eighty-six percent of growers contacted through this survey self-finance their operations; an additional 14% are financed through a bank and the remaining 7% by Carolina Farm Credit (see figure 8).

Figure 8. Sources of Financing



4.3 Constraints on Profitability

Cash flow, financing, grape cultivation equipment costs, canopy management, and scarcity of time were identified as important factors of constraint to profitability of grape growers. The results match the ones obtained for wine producers (Table 1) and that time and financial management remain the two top perceived constraints on increasing profitability. Table 2 lists the top 5 factors rated as important by grape growers and reproduces, for comparison, the top 5 factors identified by wine produces in Table 1.

Table 2. Constraints to Current Level of Profitability

Grape Growers		Wine Producers	
Factor	Mean Score	Factor	Mean Score
The scarcity of your time	3.00	The scarcity of your time	3.62
Cash flow	2.79	Bottling costs	3.03
Canopy management, Pesticide (materials + application) costs	2.71	Cash flow	3.00
Financing	2.67	Canopy management, Pesticide (materials + application) costs	2.86
Grape cultivation equipment costs	2.64	Grape cultivation equipment costs	2.55

5. A Business Development Center for the Wine Industry

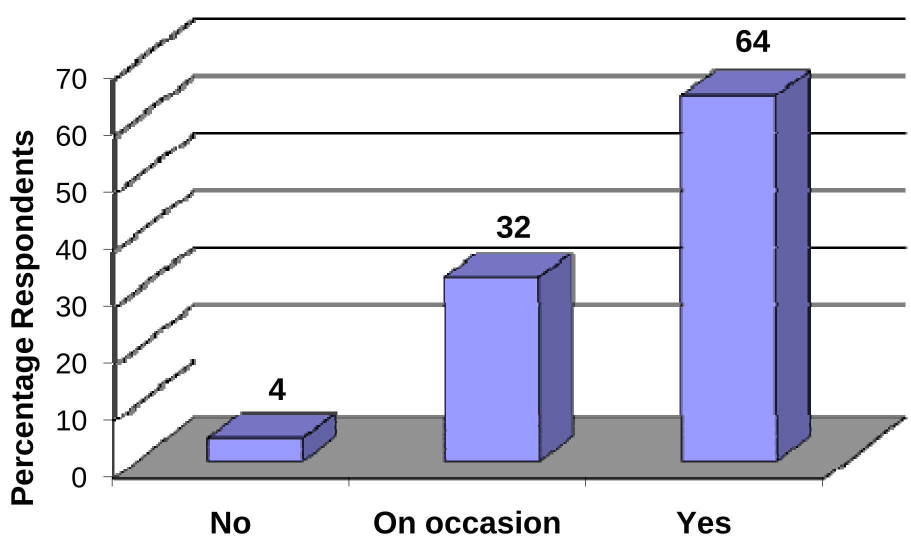
As mentioned in the introduction a strategic research question in our study was to ask the following: If a "business development center" for the wine industry were to be established, how would it be perceived and used by the winery industry and what would the center need to know in designing its services. The question is far from hypothetical; in fact such a center is already being established as the NC Center of Viticulture and Enology at Surry Community College in Dobson, NC.

5.1 Usage of the Business Development Center

Among the wineries, 64% of the respondents recognize the need for a Business Development Center and are willing to regularly use resources from the Center to improve their marketing efforts. Thirty-two percent will use it occasionally while 4 percent of the respondents will not use the facility at all; see results in Figure 9.

However, respondents also commented that a definite decision on the use of the Center would depend on the associated costs to them. There are major concerns with the location of the facility, since this will determine the costs of transportation and the hours of travel time, which will in turn take producers away from their daily operations. Several of these operations are family run businesses, mainly managed by husband and wife with occasional help. As indicated from the survey results, scarcity of time is already a major concern and therefore it will be difficult for most of them to be away from their operations for any considerable length of time. Finally, the wineries expressed concern about the amount of user fees to be charged and larger and more experienced wineries expressed concern about the level of expertise of the center staff.

Figure 9. Willingness to use a Business Development Center



5.2 Characteristics of Wineries that are most likely to use a Resource Center

Another focus of our study was to identify those features that help identify wineries that have needs for specific resources of a resource center dedicated to helping the wine industry in this region.

To begin with, the study results indicate that management at wineries who *self-distribute* wine are relatively more interested in Center resources that concern domestic and export market development. This contrasts with managements of wineries who use *distributors*, who are relatively less interested in using the resources of the Center and who tend to experience fewer pressures related to financing.

Of all the eighteen factors that were tested for being possible constraints to profitability, managements' *scarcity of time* was the one that was associated with managements' need for the *greatest number of resources* offered by the prospective Center.

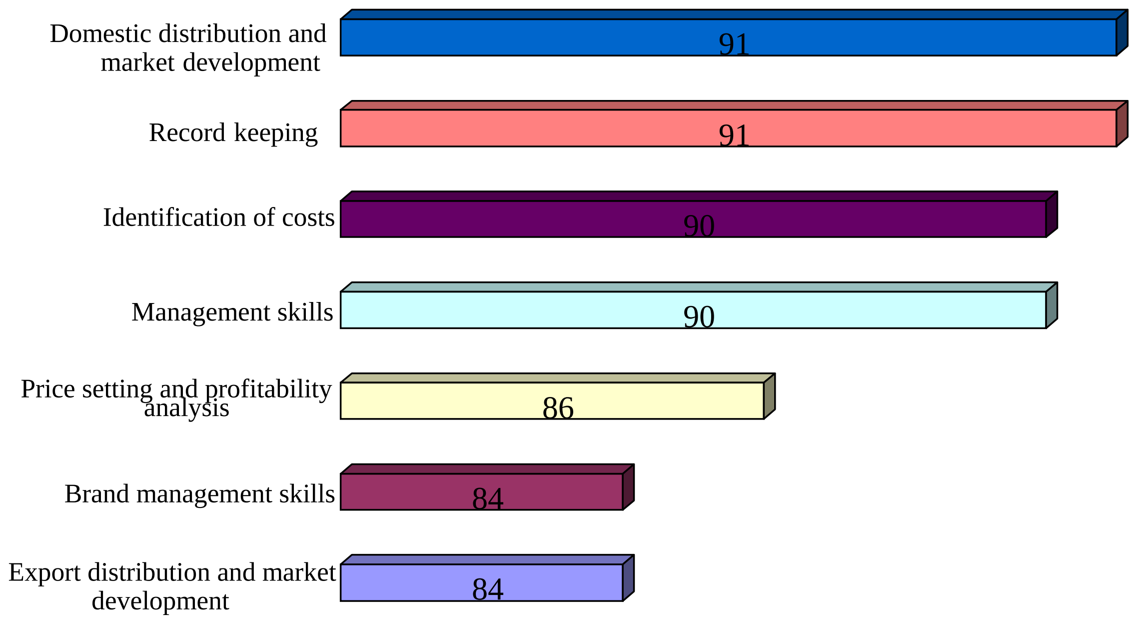
Additionally, (a) the greater the *percentage of grapes that are grown in-house*, and (b) the greater the extent that winery owners *train their own employees*, the greater is the winery's need for a wide variety of services to be offered by the prospective Center.

Finally, the greater winery management's perceived *importance of financing* as a constraint to increased profitability, the greater is the likelihood that management would be a *regular user* of the resources of the Center.

5.3 Subjects/Topics of Interest to Wineries

The interested wineries were also asked that if they used the center, what subjects/areas/issues/topics they would like the center staff to develop and offer; see figure 10 for a summary of the results. As is evident, *domestic distribution and marketing* and *records keeping* received the highest ranking from winery representatives on the type of assistance they will like the proposed business development center to offer. The second highest ranked need is *management skills* and *identification of cost. Price setting and profitability analysis* is the next on the scale. The last two identified needs are assistance on *brand management* and *export distribution and market*.

Figure 10. Ranking of Desired Subjects/Issues/Topics



5.4 Response from Grape Growers

Unlike the wineries, only 30 percent of grape growers expressed a willingness to use resources available from the Business Development Center. Forty percent responded that they will use the facility occasionally and 30 percent responded in the negative. When growers were asked of the type of resources they would like the proposed business center to offer, 71 percent proposed assistance in distribution and market development. Price setting and identification of costs were recommended by 50 percent each. Management skills were checked by 36 percent and recordkeeping by 29 percent of the respondents. The low response to the use of the business center shows that grape growers may rather have critical needs in the area of production, cash flow and financing rather than marketing.

5.5 Recommendations for NC Center for Viticulture and Enology

The above results lead the research team to make several conclusions about issues that should form the backdrop of academic planning at the NC Center for Viticulture and Enology, to be established on the premises of Surry Community College. This center is envisioned to serve as the primary business development resource center in the viticultural areas being studied in our research.

Based on our findings above, we recommend that the NC Center for Viticulture and Enology should develop an accessible (possibly online) curriculum directed primarily towards addressing the development needs of the *small wineries* who are engaged in *self-distribution.* The curriculum and outreach services of the center must address the following subjects/areas, with special attention paid to the entrepreneurial nature of these enterprises:

1. Time management techniques and strategies, including possibilities/opportunities for outsourcing
2. Cash flow management, including accounting (book-keeping), cost identification and management)
3. Marketing and distribution including market development, price setting, and profitability analysis, brand management.

6. Personal Interviews: Findings and Recommendations

In addition to the telephone surveys summarized above, the research team held detailed face-to-face interviews with five participants, including at least one key winery operator from each of the three viticultural areas under study and a key economic development official in the region. Besides being chosen to represent each of the three viticultural areas, we also ensured that the wineries selected for these interviews were well-established and poised for growth.

Overall, questions asked were unstructured but did follow the general outline of the written questionnaire. One question, however, was consistently asked of all interviewees, “If you (the interviewee) were made ‘king’ or ‘queen’ for a day, what specific things would you to do to enhance the growth and profitability of the NC wine industry?” This was done to provide the opportunity for a free-flowing discussion on the problems and opportunities confronting the NC wine industry.

As a result of the survey and interviews, two primary issues surfaced that overwhelmingly represent the salient business needs of the industry, both of which validate our findings from the data analysis, as we have previously summarized in Table 1.

1. **Financial Management –** Grape farming and wine making are capital-intensive, long-term investments that are subject to extraordinary risk presented by climatic factors. Initial investment ranges from $10,000 to $11,000 per acre for vines, trellises, fertilizer, pest management, etc. Once the grapes are planted, it takes from three to five years before the vines produce a good quality marketable crop. Once the grapes are picked and the wine making process begins, it takes from several months to several years before the wine is ready to sell. All of this translates into a significant cash-flow problem for grape growers and wine makers.

2. **Effective Time Management –** Most of the wineries share some common traits. They are small, relatively new to the wine and grape industry and grow grapes other than the traditional native Muscadine grape. Primarily, they are family based entrepreneurial businesses; indeed, they are unique entrepreneurial businesses that have to behave like mini-conglomerates. Most of the wineries grow some or all of their grapes, produce their wine, develop a marketing niche for their wine, operate a retail winery, engage in distribution activities, operate an internet business, are involved in cross-marketing sales, and are involved in tourism. This is especially challenging for small family operated

businesses. In other words, these businesses need to be all things to all people. As a result, there is a need to help the industry learn efficient ways to not only conduct business and streamline business operations but also find new resources than can help them become more productive.

6. 1 Recommendations

After performing a qualitative data analysis of the interview transcripts, several consistent themes and issues could be identified that were common to most interviews. Each issue needs further study, research, and exploration. However, for purposes of this report, we have framed these themes and issues into recommendations. Each theme pertains to a business impediment preventing the wine and grape industry from thriving and becoming more financially stable. However, these business issues are not insurmountable and, if addressed, will help the wine and industry grow and prosper.

1. **Rules and Government Regulations –** As one interviewee said, "Government does not understand the wine industry; therefore, they regulate the heck out of it." Some of the agencies cited include the following: *DOT*, *NC Department of Agriculture*, *ABC Boards*, environmental agencies, health agencies, *OSHA* and out of state agencies regulating the shipment of wines. The overall concern is that conflicting rules and too many government regulations are a hindrance to growing the wine industry in NC. North Carolina needs to review what other progressive wine growing states are doing and implement their best practices. For example, North Carolina should review how other states dispose of the by-products of making wine, including wastewater and production residue. NC should also review their signage policy for directing tourists to wineries. There is at least the perception that NC charges far more for signs than other states and provides too many restrictions for maintaining the signs.

   Interestingly, there was one consistent area where interviewees want more regulation: **Interviewees repeatedly stated that they want NC wine served at events sponsored or held by state agencies.** If North Carolina is serious about the wine industry, according to wine industry principals, this is one clear way to demonstrate their commitment. Therefore, governing rules and regulations should be reviewed and revised to facilitate this suggestion.

2. **Distribution/Retail Sales Issues –** All interviewed are almost unanimous in having strong misgivings about the commitment of wine distributors and wine retailers in furthering and advancing the sales of NC wine, especially wines from the smaller wineries. Wine industry principals interviewed believe distributors have little incentive to sell wines produced by small NC wineries. Larger, better-financed, out-of-state producers are able to offer incentives to the distributors; therefore, distributors promote these wines and often overlook the small NC wineries they represent. Some of the people interviewed also believe that in order to get a commitment from the NC wineries, the distributors will over-promise on what they can deliver. Interviewees are of the opinion that distribution agreements are much like marriages, once entered into are hard to dissolve. With regard to retailers, winery principals felt the retailers need a better understanding about NC wines and why they should promote

them to customers. As it currently exists, some of those interviewed felt that the retailers primarily “push” wines with a high margin and/or high mark-ups bypassing NC wines and may, in fact, discourage purchasing NC produced wines.

Overall, with regard to distribution and sales issues, we recommend the following:

1. A project should be undertaken (possibly by NC Wine and Grape Council) to help the winery owners better understand the wine distribution system in NC and make the most of distribution agreements.
2. Another recommendation is to study the possibility of allowing distributors to invest in NC wineries or partner with them thus providing them with an incentive to sell NC wines.
3. As will be discussed in more detail in Recommendation 3, we recommend retailers receive further education about NC wine so that they understand they are selling a “locally produced, hand-crafted” product.

3. Education – Education is needed to better inform citizens and elected officials in North Carolina that NC wineries are producing quality “hand-crafted” wines at reasonable prices that have a significant impact on the state’s economy. All interviewees were consistent in this belief that there is a strong need for more education regarding NC wine.

As evident from the interviews, the education needed can be classified as being needed on three distinct levels:

- **Wine Makers and Grape Growers** -- Easily accessible educational programs should be available for winemakers at different stages of their careers. Prospective winemakers need training in viticulture, enology, and the “business” of the wine industry. Current wine makers need to be able to access a database of “*best practices*” in growing and harvesting grapes and enology. Both groups should have available programs in *brand management* and *marketing*.

- **General Public/Citizens –** Consumers both inside and outside of North Carolina need education to learn North Carolina produces more than “sweet” red wine. While sweet wines, predominantly produced from native Muscadine grapes, are very important to the NC Carolina wine industry, the public needs to learn that NC locally produces world-class, handcrafted vinifera wines, among others. People also need education to help them become less intimidated by wine and the wine tasting experience in order to learn that NC makes a wide variety of wines for all tastes. Overall, in order to grow the NC wine industry, principals interviewed firmly believe that through public education, North Carolina must append its sweet wine reputation and create an informed public that knows and appreciates the fact that North Carolina produces wine for a variety of palates. Sweet wine is and will continue to be important to the NC wine industry. Also, with more education, the electorate of NC will better understand the economic impact of the industry and will pass referendums that will make it easier to further grow the industry.

- **State and Locally Elected Officials –** Wine industry representatives interviewed repeatedly made mention of the fact that more needs to be done to assure that elected officials within North Carolina are better educated about the wine industry. Many officials do not understand the current impact, let alone the future potential, of the wine industry on the NC economy. As was pointed out by some of the interviewees, the economic impact of the industry extends far beyond wineries themselves. While some officials do recognize the importance of the new industry, rules, regulations and laws are still enacted that frequently inhibit further growth of the industry and place further burden upon the entrepreneurs that are the backbone of this emerging industry. Hopefully, if the elected officials are better educated about the industry, they may begin to understand both the economic potential of the wine industry in NC and also the burden of regulations placed upon the industry that inhibit its growth.

4. **Marketing/Brand Management/Tourism –** As was mentioned in "Recommendation Number 3- Education," there is an absolute need to overcome the perception that all NC wine is sweet wine. While most of the interviewees were quick to point out that they produced one or more sweet wines to enhance salability, they went on to point out for the sake of the industry the industry must rise above the "sweet" wine reputation. The interviewees feel that this reputation discourages non-sweet wine consumers from trying NC wine, thus limiting market potential.

   With this in mind, the NC wine industry as a whole and the individual winery owners need to "sell" the idea that NC produces a wide variety of *"locally produced, hand-crafted*" quality wine.

   In addition, more resources are needed to further develop the tourism segment of business. Wineries and tourism are unequivocally tied together and need to be promoted together. Wine trails seem to be an important key to enhancing this marketing approach. Four such trails are already marked and three of those are primarily within the area covered in this report. A way to enhance the "trails" experience may be to combine the wine experience with heritage trails…an idea that is already underway. Additional "combination trails" could include recreational opportunities, local produced foods and the arts for example. Overall, art, music, locally produced food and wines are tied together – marketing these products together will not only grow all of these businesses but also NC tourism as well.

   Other pertinent suggestions were:

   1. Creating a mobile tasting room that could be taken to high profile NC events such as Lowe's Motor Speedway, the High Point Market, etc. As was pointed out to the interviewers, onsite events at wineries work well but take a lot of thought and effort, perhaps there is a need for a guide on the type of events that work best.
   2. Promote the uniqueness of the product through unique bottles, corks, and labels that tell a story…"romance the product."
   3. NC wine industry needs to develop a game plan, "What does North Carolina want to be known for?" In other words, find a non-Muscadine varietal to become "the other NC

wine." Washington State is known for Pinot Noir, other areas Cabernet Sauvignon, others Merlot – NC needs to become known for "something" in addition to Muscadine.

5. **Conduct More Research –** Interviews with winery owners and operators along with local officials demonstrated there are no limits to the number of ideas that exist to help grow the wine industry in North Carolina. However, it is also evident there is a need for additional research to help develop the ideas. Several ideas are mentioned throughout this qualitative report that all merit additional research. Three other research possibilities are outlined below:

   1. Develop an easily accessible "best practices" database that maintains agricultural tips for growing grapes, making wine, and starting and operating a winery.

   2. Conduct research on how to develop vines that are not as susceptible to humidity thus minimizing the problem related to mildew. In other words, find ways to overcome mildew issues caused by NC's high humidity.

   3. Develop an easily accessible checklist of regularly updated government requirements for starting, owning, and operating a winery. While the NC Wine and Grape Council's website offers considerable information and includes most of the information needed, it might be enhanced and further developed to make it more user-friendly. One suggestion is to reorganize the information and display it along the lines of a wine industry flow chart. The Council might also want to investigate how to better and more frequently promote the fact the information exists on their site, as some interviewees were unaware of the availability of the information.

Additional Issues

In addition to the recommendations made above, two underlying issues merit mention in this report.

- With regard to the NC Wine and Grape Council, some of the small wineries feel underrepresented. They would like to see more small wineries represented on the Council and would like a process developed, possibly including term limits, that would allow more turn-over on the Council encouraging new and differing opinions to emerge.

- Another issue, albeit implicitly implied in the interviews related to overall quality assurance of NC wines. Most interviewees want to assure that North Carolina continues to develop a wine industry that embraces a reputation for high quality wine; therefore, the industry should continue exploring best practices in other states and then develop a comprehensive system for assessment and continual quality improvement.

Appendix A – Survey Distributed To Wineries

Wine Industry Needs Survey

This set of questions concerns general demographic issues related to your firm.

1. How many years has your business been in operation?__________ years

2. Regarding your business, which most accurately reflects your situation?
   ____I operate a vineyard, selling my grapes to a third party.
   ____I operate a winery, purchasing the majority of grapes and juice.
   ____I operate a winery and vineyard, and grow the majority of grapes used at the winery site.
   ____I hold a wine producer permit where I operate a vineyard and tasting room and the wine is produced off site.

3. Are you a member of the:
   ___ NC Wine Growers Association
   ___ NC Muscadine Growers Association
   ___Another wine industry association. If so, please specify_______________________.

4. Have you ever belonged to a wine/grape Co-op or similar organization in the past?
   ___Yes **if yes, please identify____**
   ___ No

5. In this question please place a check mark beside each type of grape that you grow, and then write in the number of tons per acre that you produce for that type of grape.
   ____Muscadines (Vitis rotundifolia) ______tons per acre
   ____Vitis lambrusa (Niagara, Concord) _____tons per acre
   ____Vitis vinifera (Cabernet, Chardonnay, etc.) _____tons per acre
   ____Vitis aestivialis (Norton) _____tons per acre

6. If you grow grapes, please indicate your estimated TOTAL number of acres under production.
   ___ less than 5 acres
   ___ 5-10 acres
   ___11-15 acres
   ___16-30 acres
   ___ more than 30 acres

7. If you produce wine, please indicate your estimated annual production.
   ___ less than 1000 cases
   ___1000 – 3000 cases
   ___ 3001 – 5000 cases

___ 5001 – 10,000 cases
___ more than 10,000 cases

8. If you produce wine, what percent of the grapes used do you grow?
___0%
___1%-25%
___26%-50%
___51%-75%
___76%-99%
___100%

9. What percent of your wine production capacity are you currently using? __________
(Note: "wine production capacity" refers to the plant and equipment that you have on hand and "in house" to produce the wine.)

The next set of questions is intended to identify issues that impact your ability to operate to your full potential.

10. Concerning the availability of training for your labor force, - **check all that apply**:
___I provide the necessary training for my workers
___Workers have been trained through a program at the local community college
___Workers have been trained through a program that is not connected with the local community college.
___Training is not available

11. Are you currently using the H2A (migrant worker) labor program? ____ Yes ____No

12. Currently, what are your sources of financing? **Check all that apply.**
____Carolina Farm Credit
____Credit Union
____Bank
____Self-financed
____Other means of financing

13. Please indicate the degree to which the following factors represent ***barriers to enhancing your current level of profitability***. (**Please check the box that best reflects your opinion).**

Factor	**MUCH BELOW AVERAGE Importance**	**BELOW AVERAGE Importance**	**AVERAGE Importance**	**ABOVE AVERAGE Importance**	**MUCH ABOVE AVERAGE Importance**
Availability of labor					
Availability of managerial personnel					
Availability of information resources					

Cash flow					
Financing					
Skilled labor costs					
Grape cultivation equipment costs					
Vine costs					
Canopy management, Pesticide (materials + application) costs					
Wine production equipment costs					
Bottling costs					
Relationships with grape producers					
The scarcity of your time					
Availability of quality grapes					
Price competition for your product in retail stores					
Limited opportunities to distribute your wine					
Wine Production Capacity					
(Un)availability of mobile bottling lines					

These questions relate to your marketing efforts.

14. Where do you sell your product? **Check all that apply.**
    ___ own winery
    ___ grocery stores
    ___ restaurants
    ___ specialty wine stores
    ___ out of state
    ___ internationally

15. How do you distribute your wine? **Check all that apply.**
    ___ only sell from the winery
    ___ self-distribute
    ___ distributor

16. In which of the following promotional activities are you engaged? **Check all that apply.**
    ___ wine tourism
    ___ gift shop

___ Internet sales
___ advertising
___ festivals/fairs
___ wine clubs

17. If a business development center dedicated to the Grape and Wine Industry was established, what resources would you like to see offered? **Check all that apply.**
___ management skills
___ identification of costs [e.g., marketing, production]
___ record keeping
___ price setting and profitability analysis
___ domestic distribution and market development
___ export distribution and market development
___ brand management skills

18. If a business development center dedicated to the Grape and Wine Industry was established, would you use it?
___ Yes, regularly
___ On occasion
___ No

YOUR COMMENTS

(a) On the quality of NC wines and or grapes, including your suggestions, if any.
____
____
____
____

(b) Other comments
____
____
____
____

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THANK YOU FOR TAKING THE TIME TO COMPLETE THIS SURVEY!!!

Appendix B – Survey Distributed to Grape Growers

Grape Growers Needs Survey

This set of questions concerns general demographic issues related to your firm.

1. How many years has your business been in operation?__________ years

2. Are you a member of the:
   ___ NC Wine Growers Association
   ___ NC Muscadine Growers Association
   ___Another wine industry association. If so, please specify________________________.

3. Have you ever belonged to a wine/grape Co-op or similar organization in the past?
   ___Yes **if yes, please identify____**
   ___ No

4. In this question please place a check mark beside each type of grape that you grow, and then write in the number of tons per acre that you produce for that type of grape.
   ____Muscadines (Vitis rotundifolia)   ______tons per acre
   ____Vitis lambrusa (Niagara, Concord) _____tons per acre
   ____Vitis vinifera (Cabernet, Chardonnay, etc.) _____tons per acre
   ____Vitis aestivialis (Norton) _____tons per acre

5. If you grow grapes, please indicate your estimated TOTAL number of acres under production.
   ___ less than 5 acres
   ___ 5-10 acres
   ___11-15 acres
   ___16-30 acres
   ___ more than 30 acres

6. Do you process the grapes on-site for juice to be sold to wineries? ____ Yes ____No

The next set of questions is intended to identify issues that impact your ability to operate to your full potential.

7. Concerning the availability of training for your labor force, - **check all that apply**:
   ___I provide the necessary training for my workers
   ___Workers have been trained through a program at the local community college
   ___Workers have been trained through a program that is not connected with the local community college.
   ___Training is not available

8. Are you currently using the H2A (migrant worker) labor program? ____ Yes ____No

9. Currently, what are your sources of financing? **Check all that apply.**
____Carolina Farm Credit
____Credit Union
____Bank
____Self-financed
____Other means of financing

10. Please indicate the degree to which the following factors represent ***barriers to enhancing your current level of profitability***. (**Please check the box that best reflects your opinion).**

Factor	**MUCH BELOW AVERAGE Importance**	**BELOW AVERAGE Importance**	**AVERAGE Importance**	**ABOVE AVERAGE Importance**	**MUCH ABOVE AVERAGE Importance**
Availability of labor					
Availability of managerial personnel					
Availability of information resources					
Cash flow					
Financing					
Skilled labor costs					
Grape cultivation equipment costs					
Vine costs					
Canopy management, Pesticide (materials + application) costs					
Relationships with wine producers					
The scarcity of your time					
Price competition for your product in fresh market					
Price competition for your product by wine producers					
Transportation costs					
Transportation availability					
Spoilage rate					
Harvesting costs					

These questions relate to your marketing efforts.

11. Where do you sell your product? **Check all that apply.**

___ fresh market
___ wine producers
___ brokers
___ Other (Please specify) ______________________________

12. If a business development center dedicated to the Grape and Wine Industry was established, what resources would you like to see offered? **Check all that apply.**
   ___ management skills
   ___ identification of costs [e.g., marketing, production]
   ___ record keeping
   ___ price setting and profitability analysis
   ___ distribution and market development

13. If a business development center dedicated to the Grape and Wine Industry was established, would you use it?
   ___ Yes, regularly
   ___ On occasion
   ___ No

YOUR COMMENTS

(a) On the quality of NC wines and or grapes, including your suggestions, if any.
____
____
____
____

(b) Other comments
____
____
____
____

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THANK YOU FOR TAKING THE TIME TO COMPLETE THIS SURVEY!!!

Appendix C – List Of Wineries and Grape Growers

WINERY NAME	WEB ADDRESS	COUNTY
Allison Oaks Vineyards	www.allisonoaksvineyards.com	Yadkin
Autumn Creek Vineyards	www.autumncreekvineyards.com	Rockingham
Benjamin Vineyards & Winery	www.benjaminvineyards.com	Alamance
Benny Parsons Rendezvous Ridge	www.rendezvousridge.com	Wilkes
Black Wolf Vineyards	www.blackwolfvineyards.com	Surry
Brushy Mountain Winery	www.brushymountainwine.com	Surry
Buck Shoals Vineyard	www.buckshoalsvineyard.com	Yadkin
Chateau Laurinda	www.chateaulaurindawinery.com	Alleghany
Childress Vineyards	www.childressvineyards.com	Davidson
Elkin Creek Vineyard	www.elkincreekvineyard.com	Wilkes
Flint Hill Vineyards	www.flinthillvineyards.com	Yadkin
Garden Gate Vineyards	www.gardengatevineyards.com	Davie
Germanton Vineyard and Winery	www.germantongallery.com	Stokes
Glen Marie Vineyards & Winery	www.glenmariewinery.com	Alamance
Grassy Creek Vineyard and Winery	www.grassycreekvineyard.com	Surry
Grove Winery	www.grovewinery.com	Guilford
Hanover Park Vineyard	www.hanoverparkwines.com	Yadkin
Iron Gate Vineyards	www.irongatevineyards.com	Alamance
Junius Lindsay Vineyard	www.juniuslindsay.com	Davidson
Laurel Gray Vineyards	www.laurelgray.com	Yadkin
McRitchie Winery & Ciderworks	www.mcritchiewine.com	Wilkes
Old North State Winery	www.oldnorthstatewinery.com	Surry
Raffaldini Vineyards and Winery	www.raffaldini.com	Wilkes
RagApple Lassie Vineyards	www.ragapplelassie.com	Yadkin
RayLen Vineyards	www.raylenvineyards.com	Davie
Round Peak Vineyards	www.roundpeak.com	Surry
Shelton Vineyards	www.sheltonvineyards.com	Surry
Stonefield Cellars	www.stonefieldcellars.com	Guilford
Stony Knoll Vineyards	www.stonyknollvineyards.com	Surry
Surry Community College Winery	http://www.surry.edu/depts/viticulture/tasting.html	Surry
Thistle Meadow Winery	www.thistlemeadowwinery.com	Alleghany
Weathervane Winery	www.weathervanewinery.com	Davidson
Westbend Vineyards	www.westbendvineyards.com	Forsyth
Zimmerman Vineyards	www.zimmermanvineyards.net	Randolph

GRAPE GROWER	COUNTY
Jerry Bell	Alamance
Kieffer Farms	Yadkin
Oakwood Vineyards	Yadkin
Parkers Orchard	Wilkes
Cabin Creek Berry Farm	Davidson
Bettini Farm Inc.	Guilford
Garrett's Vineyard	Guilford
Birchcreek Vineyard	Guilford
Windy Knoll Farm	Guilford
Hill's Orchard & Vineyard	Randolph
14 Additional Individual Grape Growers Identified By Name (names withheld in this report)	Counties In Piedmont Triad Region