Executive Summary

California Wine Community

Sustainability Report

2009

Prepared by the California Sustainable Winegrowing Alliance
“California is proud to have wineries and winegrape growers who are committed to serving their communities and promoting socially and environmentally responsible farming practices.”

— Governor Arnold Schwarzenegger
2009 California Wine Month Proclamation

About the California Sustainable Winegrowing Alliance

The California Sustainable Winegrowing Alliance (CSWA) is a 501(c)(3) nonprofit organization incorporated in 2003 by Wine Institute and the California Association of Winegrape Growers (CAWG) to conduct public outreach on the benefits of widespread adoption of sustainable winegrowing practices, to enlist industry commitment and involvement, and to assist in effective implementation of the Sustainable Winegrowing Program (SWP). CSWA’s mission is to ensure that the California wine community is recognized as a change leader in the global marketplace. CSWA collaborates closely with Wine Institute and CAWG, thousands of growers and vintners, and other stakeholders in California. CSWA also continues to develop partnerships for funding education and outreach to advance the adoption of sustainable practices. The result of this work will be a healthier environment, stronger communities, and vibrant businesses.

About Wine Institute

Established in 1934, Wine Institute is the premier voice effectively representing wine worldwide. With membership of more than 1,000 California wineries and affiliated businesses, the organization initiates and advocates public policy that enhances the ability to responsibly produce, promote, and enjoy wine. Wine Institute works to bolster the economic and environmental health of the state and its communities by encouraging sustainable winegrowing and winemaking practices and through a partnership with California Travel and Tourism to showcase California’s wine and food offering. The membership represents 85 percent of U.S. wine production and 90 percent of U.S. wine exports. To advance the goal of global leadership in sustainable winegrowing, Wine Institute contributes significant staff time and resources to the Sustainable Winegrowing Program. Wine Institute publishes and distributes newsletters about the program (see www.wineinstitute.org) and participates in alliances – including the California Environmental Dialogue and the California Council for Economic and Environmental Balance – that bring together stakeholders to concentrate on sustainability, land use policy, and other issues affecting California.

About California Association of Winegrape Growers

The mission of the California Association of Winegrape Growers (CAWG) is to provide industry leadership to advocate public policies, research and education programs, sustainable practices, and trade positions to improve the viability of winegrape growing as an essential contributor to California’s economy, culture, and landscape. CAWG’s membership represents the growers of approximately 60 percent of the total annual grape crush. CAWG co-hosts the annual Unified Wine & Grape Symposium to deliver information and ideas for continual improvement of the state’s wine community, and sponsors research and development of publications such as Growers’ Guide to Environmental Regulations & Vineyard Development, California Vineyards & Wildlife Habitat, Summary of the Labor Law Requirements for Winegrape Growers, and The Winegrape Guidebook for Establishing Good Neighbor and Community Relations. CAWG has also played a leading role in the National Grape & Wine Initiative, a strategic research, education, and outreach plan to stimulate innovation and accelerate best practices adoption to help the wine community increase market share and be a world leader in value and sustainability while contributing to quality of life in rural communities.
Highlights of Progress

ELEMENTS OF PROGRESS covered in the 2009 report include:

• Increased and ongoing participation by the California wine community in the Sustainable Winegrowing Program (SWP) involving 1,566 winery and vineyard organizations that have self-assessed their operations in over 200 workshops throughout the state from November 2002 to October 2009;

• Organization of 184 education events that targeted areas in need of improvement and encouraged adoption of sustainable practices with more than 9,239 workshop attendees;¹

• Demonstration of improvements in 170 of 283 Code of Sustainable Winegrowing Practices Self-Assessment Workbook criteria (60%);²

• New and enhanced partnerships to leverage knowledge and resources for education and outreach in critical areas such as air and water quality, energy efficiency, integrated pest management, and ecosystem management;


• The publication of several reports to assist growers and vintners in improving their practices and communicating with external stakeholders including Biodiversity Conservation Practices in California Vineyards: Learning from Experiences, Vineyard Management Practices and Carbon Footprints, and Understanding Adoption and Impacts of Sustainable Practices in California Vineyards; and

• Increased interest and visibility for the SWP in news media coverage, at conferences, and through awards and citations.

¹ Please note, this is a cumulative participation number; some participants attended more than one event.

² While there are 227 Code workbook criteria, 283 includes criteria where both vineyards and wineries answer the assessment question.
California’s wine community has advanced efforts to be responsible stewards of the land and good neighbors, as well as strengthened its viability as businesses that contribute significantly to the state’s economy and appeal as places to work and visit.”

– Robert P. (Bobby) Koch  President & CEO, Wine Institute

“The scale on which California’s wine community is adopting and expanding sustainable practices is truly impressive, as the state is the fourth leading wine producer in the world. CSWA’s mission is to bring recognition to the California wine industry as a change leader in the global marketplace. The result of this work will be a healthier environment, stronger communities, and vibrant businesses.”

– Kim Ledbetter Bronson  CAWG Board Chair, Vino Farms

“When you discuss sustainability within the California wine community, it is not just a statement of a program but an imbedded philosophy that we live by each and every day. It is the commitment to this philosophy and the very positive impact it has on our businesses that will ensure the continued growth of the California wine industry long into the future.”

– Chris Savage  CSWA Board Chair, E.&J. Gallo Winery

THE CALIFORNIA Sustainability Report 2009 shares progress made through the Sustainable Winegrowing Program (SWP) over the past five years. Since its launch in 2002, the statewide program has energized our wineries, wine grape growers, and regional associations as a collaborative effort that brings us together for a common purpose. The program challenges us to continue to find new ways to conserve resources, maintain and improve the beauty and vitality of our rural communities, and place California wine at the forefront in wine and grape quality, environmental sensitivity, and social responsibility.

The full report is organized into 17 chapters. Chapter 1 provides an overview of the California Wine Community and the SWP, and Chapter 2 describes how to interpret the assessment results and future program targets. Chapters 3-16 present the assessment results for the thirteen sustainable winegrowing practices chapters from the Code of Sustainable Winegrowing Practices Self-Assessment Workbook. These chapters include viticulture, soil management, vineyard water management, pest management, wine quality, ecosystem management, energy efficiency, winery water conservation and quality, material handling, solid waste reduction and management, environmentally preferred purchasing, human resources, neighbors and community, and air quality. In total, there are 227 criteria in the SWP workbook and each criterion has four categories on the level of sustainable practices adoption. The report concludes with a chapter on lessons learned and next steps.

The 2009 Report presents the results for all areas where sustainable winegrowing practices information was collected. At the heart of the SWP is the philosophy of continuous improvement. Although the report reveals many strengths – highlighting areas where growers and winemakers are doing an exemplary job of balancing environmental, social and economic principles in how they practice their business – California growers and vintners are committed to improving all areas of their operation. Addressing the most challenging areas will require time, money, innovation and, in some cases, outside expertise, new technologies, an improved regulatory framework, incentives, and partnerships.

A desired outcome of publishing this report is providing information that growers, vintners, neighbors, community members, nonprofits, government and private sector professionals can use to collaborate on implementing practical solutions to improve the adoption of more sustainable winegrowing practices.

This executive summary is organized into the following five sections:
1. About the California Wine Community
2. About the Sustainable Winegrowing Program
3. Interpreting the 2009 Sustainability Report
4. Sustainable Winegrowing Practices Adoption
5. Lessons Learned and Next Steps
The long term mission for the SWP includes:

1. About the California Wine Community

Wine grapes are grown in 48 of California’s 58 counties, covering 526,000 acres, with 482,000 bearing acres and 44,000 non-bearing acres. Wine grapes are the third leading agricultural crop in revenues for California farmers. California is the leading agricultural state in the nation with annual gross farm receipts at more than $33 billion.

California produces an average 90 percent of all U.S. wine with about 240 million cases per year. Wine is the state’s number one finished agricultural product in dollar value. If California were a nation, the state would be the fourth leading wine-producing country in the world behind France, Italy and Spain. California wine has an economic impact of $58.9 billion on the state, counting revenues to the wine industry and allied industries, direct, indirect, and induced economic benefits.

More than 50 regional winegrower and vintner associations provide education, community outreach, and marketing services to local grower and winery members.

2. About the Sustainable Winegrowing Program

Wine Institute and the California Association of Winegrape Growers (CAWG) partnered to design and launch the Sustainable Winegrowing Program (SWP) in 2002. The California Sustainable Winegrowing Alliance (CSWA) was incorporated a year later to continue implementing this comprehensive program. These three organizations collaborate and work with many other stakeholders, guided by the mission, vision, and approach of the SWP summarized below.

MISSION

The long term mission for the SWP includes:

- Establishing voluntary high standards of sustainable practices to be followed and maintained by the entire California wine community;
- Enhancing grower-to-grower and vintner-to-vintner education on the importance of sustainable practices and how self-governance improves the economic viability and future of the wine community; and
- Demonstrating how working closely with neighbors, communities and other stakeholders to maintain an open dialogue addresses concerns, enhances mutual respect, and accelerates positive results.

VISION

The vision of the SWP is the sustainability of the California wine community for future generations. In the context of winegrowing, the program defines sustainability as winegrape growing and winemaking practices that are sensitive to the environment (Environmentally Sound), responsive to the needs and interests of society-at-large (Socially Equitable), and economically feasible to implement and maintain (Economically Feasible). The combination of these three principles is often referred to as the three E’s of sustainability. These important principles are translated into information and education about specific practices that are documented in the program’s comprehensive Code workbook and are conveyed during the program’s targeted education events that are aimed to encourage the adoption of improvements over time.

SWP CYCLE: A CYCLE OF CONTINUOUS IMPROVEMENT

The SWP is designed to stimulate a “Cycle of Continuous Improvement” among growers and vintners by enabling them to assess the sustainability of their operations, learn about new approaches and innovations, develop action plans for improvements and implement changes to increase their adoption of sustainable practices. The cycle consists of:

- a) Providing participants with the Code workbook, a practical self-assessment tool, and workshops;
- b) Measuring and tracking the results of self-assessments;
- c) Using customized SWP reports to show participants their performance against regional and statewide averages;
- d) Offering important information and educational opportunities about sustainable practices, focused on areas needing improvement to help participants develop Action Plans;
- e) Facilitating exchange of information among growers and vintners; and
- f) Motivating participants to implement effective changes.

Participants are encouraged to assess themselves again, to continue this cyclical process of evaluation, learning, action planning and improvement.

THE CALIFORNIA WINE COMMUNITY’S GROWING PARTICIPATION IN THE SWP

A prominent feature of the SWP is the active leadership and participation by vintners and growers in all phases – from development, refinement and on-going implementation to adoption of the practices in their wineries and vineyards.

Self-assessment utilizing the Code workbook represents the first phase in the Cycle of Continuous Improvement. Since 2002, 1,566 wineries and vineyard organizations have self-assessed their operations in over 200 workshops. Please see page 6 for detailed participation data. These statistics demonstrate a 66% increase in total number of distinct vineyard and winery organizations participating in the program since the 2004 report, with these organizations representing 68.1% of the 526,000 total statewide acres and 62.5% of 240 million total statewide cases.

It is important to note that wineries that have assessed their vineyards are also included in the vineyard assessment numbers. Nearly all California wineries own vineyards with some having significant vineyards holdings and many purchasing additional grapes from other sources for use in their wines.

THE CALIFORNIA WINE COMMUNITY’S INVOLVEMENT IN OTHER RELATED PROGRAMS

Many of the state’s diverse winegrowing regions have sustainable and environmental programs which provided the foundation for the statewide SWP. These programs, as well as organic and biodynamic wine-growing, play an important role in the ever-expanding tapestry of the California wine community’s efforts to “green” the industry. In addition to broad participation in the SWP, many vintners and growers are also active in the following educational and certification programs: Lodi Sustainable Winegrowing Program and Lodi Rules (Lodi Winegrape Commission), Napa Green (Napa Valley Vintners and partner organizations), Sustainabil-ity In Practice (SIP) Vineyard Certification (Central Coast Vineyard Team), Fish Friendly Farming®
TARGETED EDUCATION EVENTS

As part of the Cycle of Continuous Improvement, CSWA and regional grower and vintner organizations collaborate to develop and facilitate educational events that target the more challenging areas in sustainable winegrowing. Thanks to a number of grants, CSWA has been able to offer 184 targeted education events in winegrowing regions throughout the state, attracting 9,239 attendees in the following areas:

- Water Conservation and Quality (USDA Natural Resources Conservation Service)
- Air Quality (USDA Natural Resources Conservation Service)
- Ecosystem Management and Biodiversity (National Fish and Wildlife Foundation)
- Energy Efficiency (Pacific Gas and Electric Co.)
- Integrated Pest Management (American Farmland Trust, CA Department of Pesticide Regulation)

Targeted education events such as workshops, field days, and seminars support participants’ efforts in action planning and implementing more sustainable vineyard and winery practices.

CSWA solicits input and involvement from growers, vintners, government agencies, industry experts, and scientists to provide event content on areas in need of improvement, as identified by self-assessment results. The full report highlights Integrated Pest Management and Energy Efficiency as two examples that demonstrate how partnerships, education, and outreach have led to significant improvements on the ground.

EDUCATIONAL RESOURCES AND TOOLS

In addition to releasing a second edition and web-based version of the Code of Sustainable Winegrowing Self-Assessment Workbook in 2006 and targeted education events, CSWA has developed new resources and tools to further disseminate useful information on sustainable winegrowing practices, including the following, all of which are available on-line at www.sustainablewinegrowing.org.

- Sustainable Winegrowing Highlight Newsletters
- International Wine Industry Greenhouse Gas (GHG) Protocol and Accounting Tool
- Comprehensive Guide to Sustainable Management of Winery Water and Associated Energy
- Reducing Risks through Sustainable Winegrowing: A Growers’ Guide
- Vineyard Management Practices and Carbon Footprints
- Understanding Adoption and Impacts of Sustainable Practices in California Vineyards

SWP RECOGNIZED AS A MODEL PROGRAM

The SWP is creating environmental and social benefits for communities and for the state as a whole, and is helping to ensure that future generations will be able to continue to produce world-class wines and contribute to California’s economy. Importantly, the SWP is also a model for other agricultural sectors and businesses, as recognized by the following awards:

- California Council for Environmental and Economic Balance (CCEEB), Governor Edmund G. "Pat" Brown Award (2005)
- Governor Arnold Schwarzenegger, The Governor’s Environmental and Economic Leadership Award (2004)
- California Environmental Protection Agency, Integrated Pest Management Innovator Award (2003)

Other indicators of success in promoting the adoption of sustainable practices among the state’s wine community have been the increased mention of the SWP and winery and vineyard sustainable winegrowing practices in various publications, and by invitations to make presentations or to host vineyard and winery tours to showcase the SWP.
3. About the 2009 Sustainability Report

The Code workbook includes a built-in measurement system. Participants assess their practices according to a four-category system. Category one illustrates practices which are considered to be the minimum level of sustainability for that criterion but within regulatory compliance, if regulations exist. For instance, the following table illustrates the four performance categories for the criterion “Organic Matter” in the Soil Management chapter. The categories and associated practices represent increasing sustainability moving from right to left.

<table>
<thead>
<tr>
<th>CRITERIA</th>
<th>CATEGORY 4</th>
<th>CATEGORY 3</th>
<th>CATEGORY 2</th>
<th>CATEGORY 1</th>
</tr>
</thead>
<tbody>
<tr>
<td>4-8 Organic Matter</td>
<td>A combination of organic matter is added to the soil annually (e.g. permanent or annual cover crop, compost, and/or manure). And tillage is reduced or eliminated to lower the rate of organic matter breakdown.</td>
<td>Some form of organic matter is added to the soil annually (e.g. annual cover crop, compost, manure, or a combination of cover crop and manure or compost).</td>
<td>Resident vegetation is allowed to grow in the winter.</td>
<td>No organic matter is added to the soil other than what the vine produces, and resident vegetation is minimized in the winter. And the vineyard is clean tilled.</td>
</tr>
</tbody>
</table>

Organic matter improves soil tilth and structure, improves aeration and infiltration, increases water-holding capacity, buffers soil pH, increases the availability of micronutrients, provides a source of plant nutrients, and feeds beneficial microorganisms.

INCREASING SUSTAINABILITY

When interpreting the results between criteria it is very important to consider that the criteria are not all scaled the same, meaning that categories “4,” “3,” “2” and “1” between criteria, and more importantly across chapters, do not represent the same level of sustainability. For example, it may be more difficult to implement a category “3” or “4” for some criteria. This is especially true for chapters 9 through 15.

4. Sustainable Winegrowing Practices Adoption

This section summarizes each of the chapters of the Code workbook, how each contributes to sustainability, grower and vintner improvements in average scores since the 2004 Sustainability Report, and areas for improvement. In addition to the practices mentioned below, growers and vintners are encouraged to continue to assess their operations and implement site-specific plans to continuously improve the sustainability of practices.

Example of a “Response Distribution” Graph

This chapter provides growers with 7 criteria to assess the balance of their vines through canopy management and crop development practices, and 13 criteria on developing new or replanting vineyards. Balanced vines contribute to sustainability through increasing fruit quality (economic), and reducing the need for inputs such as water and fertilizers (environmental, social and economic). The average scores increased for 17 out of 20 criteria since the 2004 Sustainability Report.

4 Given the low number of new vineyard developments and replants, workshop participants were asked to use criteria 3-8 to 3-20 as educational tools and to think back on how they developed or replanted a vineyard sometime in the past. Consequently, it is not appropriate to interpret these results relative to actual new plantings and replants.
SOIL MANAGEMENT (Vineyard)

This chapter provides growers with 16 criteria to assess their overall soil management program including monitoring, nutrient management, soil quality and pollution prevention. Soil management contributes to sustainability through increasing fruit quality (economic), reducing the need for inputs such as water and fertilizers (environmental, social and economic), and preventing pollution from soil erosion and off-site movement of nutrients (environmental and social). The majority of growers reported implementing practices that together form an excellent overall soil management program. This set of practices includes conducting the appropriate soil and plant monitoring techniques, building soil organic matter through cover cropping and other practices, managing nutrients to achieve balanced vines, reducing nutrient loss, reducing compaction, and limiting soil erosion. The average scores increased for 15 out of 15 criteria since the 2004 Sustainability Report. One criterion on soil erosion was added since the 2004 report.

VINEYARD WATER MANAGEMENT (Vineyard)

This chapter provides growers with 13 criteria to assess their water management strategy, off-site water movement, irrigation system set-up and maintenance, irrigation scheduling, and fertigation practices. Water management contributes to sustainability through increasing fruit quality (economic), reducing the need for water and fertilizers inputs (environmental, social and economic), and preventing pollution from soil erosion and off-site movement of nutrients (environmental and social). The majority of growers reported practices that contribute to an excellent water management program. These practices include having a sound water management strategy, off-site water management contributing to sustainability through increasing fruit quality (economic), reducing the need for water and fertilizers inputs (environmental, social and economic), and preventing pollution from soil erosion and off-site movement of nutrients (environmental and social). The majority of growers reported implementing practices that together constitute an excellent soil, vine, disease, weed and vertebrate pest management program. The majority of growers also report implementing practices for using pesticides in an effective and safe manner including calibrating and maintaining application equipment, applying for proper coverage, using buffer zones, and going beyond legal requirements to manage drift and reduce risks during storage, mixing and loading. The average scores increased for 35 out of 38 criteria since the 2004 Sustainability Report.

WINE QUALITY (Vineyard and Winery)

This chapter provides growers with 8 criteria to assess fruit quality, knowledge of wine produced from the vineyard, and knowledge of the wine industry. It also provides vintners with 2 criteria to assess their knowledge of the wine industry. Wine quality is usually related to grape and wine prices. Thus, wine quality contributes directly to the economic sustainability of vineyards and wineries. Wine quality can also contribute indirectly to the social and environmental components by generating sufficient revenue to invest in practices that increase environmental and social benefits. More than 75% of growers reported using best practices for evaluating field fruit maturity, tasting grapes with winery personnel, conducting appropriate juice chemical analysis, tasting wine made from their grapes, possessing a high-level of knowledge about wine quality, and determining which viticultural practices contribute to wine quality. More than 72% of vintners reported best practices for knowledge of wine quality. For growers, the average scores increased for 8 out of 8 criteria and for vintners, the average scores increased for 1 out of 2 criteria since the 2004 Sustainability Report. There is an opportunity for statewide improvement for the grower planning and monitoring criteria.

ECOSYSTEM MANAGEMENT (Vineyard and Winery)

This chapter provides growers with 20 criteria and vintners with 11 criteria to assess how they have defined their resource base to be managed, the status of developing a sustainability strategy (mission, vision and values), the integration of ecosystem processes with winegrowing practices, and how winegrowing practices affect environmental quality. Ecosystem management practices particularly contribute to environmental and social sustainability principles through protecting and enhancing overall environmental quality. The majority of growers and vintners report that they have adopted practices that support ecosystem management including defining resources, implementing sustainability strategies, understanding and enhancing ecosystem functions and processes, and implementing practices that enhance or conserve important habitat types. For growers, the average scores increased for 17 out of 20 criteria and for vintners, the average scores increased for 4 out of 11 criteria since the 2004 Sustainability Report. There is a statewide opportunity for improvement in 2 grower and vintner criteria including habitat for birds and partnerships for sensitive species.

ENERGY EFFICIENCY (Vineyard and Winery)

This chapter provides growers with 7 criteria and vintners with 10 criteria to assess the following: state of their energy efficiency planning, monitoring, goals, and results; total energy consumed per ton of grapes and/or gallons of wine produced; extent of energy efficiency per major operation; and the extent of management support and employee training efforts to improve energy efficiency. Energy efficiency contributes to all three sustainability principles by saving money (economic), reducing regional energy demands (social), and preventing pollution and greenhouse gas emissions (environmental, if the energy is from non-renewable sources). Some growers and vintners reported using category “4” or “3” practices for each criterion. The percent of reported use of category “4” or “3” practices ranged from 10% to 40%, depending on the criteria. For growers, the average scores increased for 7 out of 7 criteria and for vintners, the average scores increased for 7 out of 10 criteria since the 2004 Sustainability Report. There is a statewide opportunity for improvement in 6 grower criteria including planning and monitoring, motors, drives and pumps, lighting, and office equipment. There is a statewide opportunity for improvement in 6 vintner criteria including planning and monitoring, refrigeration, tanks and lines, motors, drives and pumps, and office equipment.

WINERY WATER CONSERVATION AND QUALITY (Winery)

This chapter provides vintners with 16 criteria to assess the following: the state of their water conservation and quality planning, monitoring, goals, and results; total water consumed per gallons of wine produced; the extent of water conservation practices per major operation; and the extent of management support and employee training efforts to improve water conservation. Water conservation and quality contribute to all three sustainability principles by saving money (economic), reducing regional water demands (social), and protecting water quality (social and environmental). More than 25% of vintners reported using the highest level of water conservation and quality practices in their water quality planning and monitoring, crushing, pressing, barrel washing, barrel soaking operations,
water to ponds, and bottling. For wineries, the average scores increased for 10 out of 16 criteria since the 2004 Sustainability Report. There is a statewide opportunity for improvement in 4 vintner criteria including water conservation planning and monitoring, storm water, cellars and labs.

**MATERIAL HANDLING (Vineyard and Winery)**

This chapter provides growers and vintners with 14 criteria to assess the following: state of their material handling planning, monitoring, goals, and results; the total hazardous materials handled per ton of grapes or gallon of wine produced; the extent of pollution released by major operations; and the extent of management support for and employee training in pollution prevention efforts. Material handling best practices contribute to sustainability by greatly reducing risks from the use of hazardous materials (social and environmental) and potential liability issues (economic). More than 25% of growers reported using the highest level of material handling practices for handling tires and lubricants, oils, and coolants. Twenty-five percent of vintners reported using the highest level of material handling practices for handling tires, storm water protection, and janitorial supplies. For growers, the average scores increased for 12 out of 14 criteria, and for vintners, the average scores increased for 4 out of 14 criteria since the 2004 Sustainability Report. There is a statewide opportunity for improvement in 4 grower criteria including planning and monitoring and vehicle maintenance. These criteria include pomace and lees, cooperage, glass, cardboard, shrink wrap, packaging, metals, cork, pallets, and landscape residues. For vintners the average scores increased for 6 out of 16 criteria since the 2004 Sustainability Report. There is a statewide opportunity for improvement in 7 vintner criteria including planning and monitoring, paper, shrink wrap, packaging, cork, natural cork, capsules, and food and beverages.

**ENVIRONMENTALLY PREFERRED PURCHASING (Vineyard and Winery)**

This chapter provides growers with 5 criteria and vintners with 14 criteria to assess the following: state of their environmentally preferred purchasing (EPP) planning, monitoring, goals, and results; the purchasing impacts by operation; and the extent of management support for and employee training in EPP efforts. EPP contributes to all three sustainability principles by using environmentally preferred products and services and by supporting the growth of private sector companies committed to delivering environmentally preferred products and services. Some growers and vintners reported using category “4” or “3” practices for each EPP criterion. The percent of reported use of category “4” or “3” practices by growers or vintners ranged from 7% to 23% depending on the criteria. For growers, the average scores increased for 3 out of 5 criteria, and for vintners, the average scores increased for 7 out of 14 criteria since the 2004 Sustainability Report. There is a statewide opportunity for improvement in 2 grower criteria including planning and monitoring and vehicle maintenance products. There is a statewide opportunity for improvement in 8 vintner criteria including planning and monitoring, service contracts, paper, packaging from suppliers, glass, capsules, office equipment and vehicle maintenance products.

**HUMAN RESOURCES (Vineyard and Winery)**

This chapter provides growers and vintners with 16 criteria to assess the following: state of their operations development of a mission, vision and values statements; the state of their human resource planning, monitoring, goals and results; the status of staff levels and recruitment to implement sustainable business strategies effectively; the extent of employee training and skills to accomplish work effectively; and the status of company culture for creating positive employee relations. Human resources contribute to all three sustainability principles because how a vineyard and/or winery organization is operated, staffed and conducts business impacts the triple bottom line — the economic, social and environmental performance of a company. More than 60% of growers and vintners reported the highest level of practices for staying informed about the industry and participating in industry activities. Other reported strengths for both growers and vintners include training, professional training and development, and participating in industry activities. For growers, the average scores increased for 15 out of 16 criteria and for vintners, the average scores increased for 2 out of 14 criteria since the 2004 Sustainability Report. There is a statewide opportunity for improvement in 3 vintner criteria including housing, health care and outreach.

**AIR QUALITY (Vineyard and Winery)**

This chapter provides growers with 10 criteria and vintners with 6 criteria to assess the following: state of their business sustainability strategy in the context of air quality; the state of their air quality planning, monitoring, goals, and results; the state of practices that impact air quality, including management of vineyard fouls and unpaved surfaces, irrigation, pesticide management, energy use and transportation. Improving practices in this chapter can protect air quality (environmental and social) and reduce regulatory risks (economic). This chapter was produced and available for self-assessment following publication of the 2004 Sustainability Report. The average scores constitute the initial benchmarks against which future progress will be determined. There is a statewide opportunity for improvement in 3 vintner criteria including planning and monitoring, chemicals and materials, and energy sources and efficiency.
5. Lessons Learned and Next Steps

From its inception, the SWP has followed an adaptive management approach, moving through the cycle of design, implementation, documentation, analysis, and refinement. During this process, CSWA has identified a number of lessons learned and next steps that will help ensure continuous improvement for both the program and practices used in California wineries and vineyards. The lessons learned and next steps may also be useful for other groups that are pursuing comprehensive sustainability programs.

In addition, by analyzing the data from the 2009 Report, CSWA was able to identify relative strengths and opportunities, which will help guide the targeted education and program activities over the next five years.

LES SONS LEARNED

Wine Community Leadership. The leadership demonstrated by the state and regional associations and their grower and vintner members was instrumental to launching the program and to its on-going implementation. Once a forum was created to define sustainable practices and later organize workshops, existing local leaders stepped forward to contribute, and a number of new leaders have emerged. This grassroots leadership was essential in crafting sustainable practices relevant to regional conditions and different sized operations. Moreover, the high level of participation in the SWP over the past five years is directly attributable to the local leadership from regional associations, and the willingness of growers and vintners to share best practices with their peers.

External Stakeholder Partnerships. Partnerships with external stakeholders have been critical to the development, evolution, and success of the SWP. These stakeholders not only provided significant input into the both editions of the Code workbook, but continue to enable CSWA to leverage resources and expertise to enhance workshop and educational tools to spur adoption of sustainable practices. The SWP also fosters positive relationships between growers and vintners and other stakeholders, cultivating “win-win” opportunities at the local, regional, state and national levels and further demonstrates the importance of multi-sector collaboration.

Measurement and Reporting. The SWP’s innovative system of confidentially and securely capturing, tracking and reporting sustainable practices data has given CSWA the ability to provide SWP participants with customized benchmark reports and to measure and report aggregate statewide data over time. The initial dataset used to establish baselines for all sustainability criteria in the 2004 Sustainability Report was the first time an agricultural sector published a comprehensive set of sustainability results. In that same report, CSWA established 20% improvement targets for all criteria with a mean less than category “3” over the next five years. The across-the-board targets have yielded mixed results, in large part because the degree of resources required to make 20% improvements are not equal between criteria or between categories within criterion. With five additional years of experience, CSWA has reviewed the initial approach to target setting and does not believe it is the best method to evaluate actual improvements over time. Instead, CSWA is now working on developing quantitative performance metrics to set new industry-wide targets.

Cycle of Continuous Improvement. As described in this report, the Cycle of Continuous Improvement is the process CSWA uses to encourage adoption of sustainable practices. While CSWA has been successful in providing participants with the SWP workbook and workshops, tracking and measuring self-assessments results, offering educational opportunities about sustainable practices, and facilitating the exchange of information among growers and vintners, it has not had a robust mechanism to ensure participants implement action plans and re-assess their operations. Several of the “Next Steps” described below are intended to facilitate the repeated use of the process, thereby helping “close the loop” of the Cycle.

NEXT STEPS

The following “next steps” have been identified as critical steps toward increasing the adoption of sustainable winegrowing practices throughout the California wine community.
Launch and Implement Certified California Sustainable Winegrowing. CSWA is launching Certified California Sustainable Winegrowing (CCSW-Certified), a third-party certification program related to the SWP, in January 2010. CCSW-Certified is the logical next step in the evolution of the SWP, and will provide California winegrape growers and vintners with the voluntary option of verifying their adherence to a process of continuous improvement in the adoption and implementation of sustainable winegrowing practices. CCSW-Certified aims to advance the industry as a whole. It is intended to be a catalyst for continual improvement and to support the entrance of growers and vintners at all stages of the sustainability journey to participate and benefit from the program, while enhancing program credibility through third-party verification.

Develop Performance Metrics. CSWA recently secured a three-year, national USDA NRCS Conservation Innovation Grant to identify a minimum of five key sustainability performance metrics for the industry (energy and water efficiency, GHG intensity, etc.) to be used for benchmarking industry performance and setting targets for improvement. The Stewardship Index for Specialty Crops, a multi-stakeholder effort to develop common sustainability “yardsticks,” will help inform the final set of metrics. Representatives of the California wine industry are actively involved in this related project. In the future, participants in CCSW-Certified must consider industry-wide targets when creating action plans. These metrics will also help CSWA focus its education and outreach to address California wine community priorities and targets for improvement.

Build the Business Case for Sustainable Winegrowing. Through several projects designed to highlight the economic benefits of adopting sustainable practices, CSWA has begun to build the business case for sustainable winegrowing. Several recent publications highlight practices such as monitoring for pests, reduced tillage, and energy conservation that simultaneously result in reduced environmental and/or social risks as well as potential costs. Future program activities will further characterize, quantify, and emphasize links between sustainable winegrowing and economic success.

Communicating with External Stakeholders. While most program communication to date has targeted the wine industry, CSWA has begun an outreach and education campaign geared toward other stakeholders and the general public. Given the growing interest in issues pertinent to sustainability by gatekeepers such as restaurants and retailers, as well as consumers, it is increasingly important to spread the message about the California wine community’s leadership and accomplishments in sustainable winegrowing. CSWA will reach out to key stakeholders and develop communication tools for SWP vintner and grower participants, as well as CCSW-Certified wineries and vineyards.

Work with Research Institutions to Target Knowledge Gaps. CSWA has made great strides in strengthening ties with viticulture and enology research institutions including UC Davis, California State University at Fresno, Cal Poly San Luis Obispo, Sonoma State University, and others over the past five years. Once again, there is a need to review in detail the assessment results with the research community to identify priority research gaps and encourage mission-driven research that speeds the adoption of sustainable practices.

Publish Progress Reports and the 2014 Sustainability Report. To allow time for the next round of implementation and data collection and analysis, the next full Sustainability Report is not expected to be published until 2014. In the interim, CSWA will provide updates on progress. CSWA will continue to make these reports available online at www.sustainablewinegrowing.org.

Providing leadership in sustainability is a prime motivator for the vintners and winegrape growers participating in the SWP. We hope that our efforts serve as an inspiration and model for other agricultural sectors to work with their stakeholders to identify, implement, measure, and report on the adoption of best practices that are environmentally sound, socially responsible and economically feasible.
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CSWA values your feedback, questions and concerns. Please contact us at info@sustainablewinegrowing.org.