The Greenest Grape: New Zealand's Commitment to Sustainable Winegrowing

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Introduction

During the New Zealand trip in May 2008, the Martindale group had the pleasure of hearing Rod Oram, financial journalist and author of the book Reinventing Paradise, speak at a dinner event in Auckland. In his book Oram argues that New Zealand’s role in the global economy is diminishing because the factors fueling its own economy for the last couple of decades are unsustainable. (p. 78) He believes that the most unfavorable factor holding back New Zealand’s growth is that the majority of the country’s exports are low-value commodities and low-technology goods that face tariffs and other barriers in the world market. While Oram scolds the agriculture sector, he singles out the wine industry and praises its success in creating high-quality and marketable products. (p. 110) The wine industry has embraced a sustainable business plan that considers and integrates environmental, social, and economic dimensions in recognizing the limits of its resources, both natural and artificial. This requires a careful balancing act as winegrowers and winemakers must reduce their environmental impact while retaining workers and profits.

In this article I discuss several factors that helped set the stage for the wine industry’s rise to global competitiveness. The variable climate of New Zealand’s winemaking regions yields diverse styles of wine that appeal to a wide consumer base. In the 1980s New Zealand companies were finally able to introduce their unique brands to the international market. Domestic government economic reforms provided safety assurance to foreign customers. During this time also, newly established industry-led programs encouraged innovative and sustainable winemaking policies and techniques. These programs achieved high-quality wines while wielding a key marketing tool: New Zealand’s reputation for a unique and pure landscape. The convergence of all of these factors has led to the growth of the New Zealand wine industry. I conclude this article by discussing why preserving New Zealand’s clean, green image will be vital for the future as consumers
around the world become increasingly conscious of the impact of their decisions at the grocery store on climate change and other environmental issues.

Overview of the NZ Wine Industry

Every year, the New Zealand wine industry continues to expand in the global market. From June 2007 to June 2008, New Zealand sold 88.6 million liters of its wine offshore, lifting its exports 14 percent from the previous year to NZD $800 million. During that year, consumers in the United Kingdom, one of New Zealand’s largest exporting markets, bought more New Zealand wine even as prices increased. In the UK, a bottle of New Zealand wine sold for £2.09 more than its nearest competitor. If this pattern of success continues, the wine industry will be on target to achieve one billion dollars in exports by 2010. (“Annual Report 2008”) Indeed, consumers enjoy New Zealand’s unique collection of wines. The country’s variable climate and new, creative techniques in winemaking combine to elicit new flavors and varieties, even in the most classic styles of wines.

Winegrowing Regions

New Zealand has ten main winegrowing regions that span the diverse landscapes and soil types of the country’s two islands. The country’s vineyards are predominantly located on the coastlines of the islands, where they flourish in a temperate maritime climate that offers a long, slow ripening period for the grapes. However, growing grapes in non-coastal areas of the country also cultivates a range of flavors among many styles of wine. The flavor of the Chardonnay grape varies according to the type of climate and soil in which it is grown, so it is planted in almost all of New Zealand’s regions to bring out many unique tastes and acidity levels. For example, in Auckland and Northland, the warmest regions, the land produces a Chardonnay described as rich and broad-flavored, while wines from the self-named “Chardonnay Capital of New Zealand,” Gisborne, taste of ripe peach, melon and pineapple flavors. (“Wine Styles”)

Wine Styles

New Zealand receives international acclaim for its Sauvignon Blanc, which represents more than 50 percent of the country’s wine production. There are two main regional styles of Sauvignon Blanc: Northern (Hawkes Bay and further north) and Southern (the South Island and Wellington regions). More than two-thirds of Sauvignon Blanc vines are found in Marlborough, New Zealand’s largest winemaking region. (“Wine Styles”) As one wine expert writes, “Think Sauvignon Blanc; think New Zealand. . . . The Sauvignon from this one tiny area of one tiny country has become the global pinnacle for the variety, and one of the world’s most recognizable wine styles.” (Cannavan)

The Pinot Noir grape is often described as a temperamental because it requires specific growing conditions and a skilled handler to transform it into wine. New Zealand is one of few countries that has the combination of long sunshine hours and temperate climate needed to successfully produce the Pinot Noir grape. It is widely planted in New Zealand but grows best in the Wellington region and the South Island regions that have cool temperatures and low rainfall. Because the fussy grape cannot be grown in many places in the world, there are instances of other countries “going global” by acquiring New Zealand vineyards that make this specialized and often expensive wine. (Rauber) Cabernet Sauvignon and Merlot are two other top performers and are mostly grown in New Zealand’s warmer and dryer northern wine regions. Hawkes Bay has seen much success in making these Bordeaux varieties and has the largest plantings of these grapes in New Zealand. In addition to the well-known wines previously mentioned, New Zealand winemakers have also had success in experimenting with barrel-fermented and oak-aged styles, and developing several aromatic varieties such as Riesling, Gewürztraminer, and Pinot Gris, as well as sparkling wines in the cooler regions. (“Wine Styles”)

Industry Organizations

Until the mid-1980s, the wine industry in New Zealand consisted of small family-owned businesses producing wines for a largely unin-
terested domestic market. Starting in 1984 the government began to establish safety requirements and provide funding for programs that supported the growth of wineries that produced high-quality wines. (Vitalis) Until this period of government reform, however, the first step toward organizing the wine industry and promoting its interests came from within the wine community itself. The New Zealand Grape Growers Council was formed in 1968 as a national organization made by and for grape growers from all of New Zealand’s winegrowing regions. In 1975 another organization emerged from the industry: the Wine Institute of New Zealand. The role of the Wine Institute is to “promote and represent the national and international interests of the New Zealand wine industry and New Zealand winemakers.” (“Our Role”) Currently the Institute, with 618 member wineries, catalogues key industry statistics, initiatives, and developments and reports back to its members and to the Minister of Agriculture. It also keeps its members informed of national and international wine-related legislative matters, and coordinates research on green solutions to viticultural and resource management issues.

In 1976 the government recognized the Institute and established funding for it by passing the Wine Makers Levy Act (WMLA). The Act set provisions for applying for a winemaking license and provided for a levy to be placed on New Zealand wine sold by licensed winemakers, with the purpose of funding the Institute to promote, develop, and improve the grape winemaking industry. The Institute has authority on how to spend the levy money. Most of the funds go toward activities that will benefit all winemakers, such as organizing export trade fairs. The Grape Growers Council received its recognition when it was funded under the provisions of the Commodities Levy Act of 1990. The Act imposes a levy on the farm gate price¹ of all grapes sold for winemaking purposes in New Zealand. The rate of the levy is 0.75 percent of the selling price. (“Our Role”) With the passing of the Wine Makers Levy Act and the provision of funding for the industry-led Wine Institute and the Grape Growers Council, the government finally recognized the potential of New Zealand’s wine business.

Export Certification

As mentioned in the previous section, organization within the wine industry and funding from the government set the stage for New Zealand wineries to expand into the international market. As a result, regulations became necessary to assure importing countries that New Zealand wines were correctly identified and met safety requirements before entry into the foreign market. Toward this end, the New Zealand government passed the Wine Makers Act of 1981 to establish the requirements for wine export certification. Under this Act the Ministry of Health issues export certificates to grape and kiwifruit wine exporters. The Ministry only signs the certificate if it is satisfied that the product complies with food regulations. (“Review of Wine Legislation”)

In 2003 the government decided it was time to upgrade its laws to keep up with the changing nature of the wine industry, especially the increased emphasis on exports. The New Zealand Wine Act of 2003 officially set the legal framework for a New Zealand wine to be eligible for export. (“Review of Wine Legislation”) To be exported, wine must meet safety and export eligibility requirements, from the personal hygiene of the food handlers to the cleaning and sanitizing of the wineries. Wine must be honestly labeled so as not to mislead consumers concerning the quality, origin, and identity of the wine.

Sustainable Winegrowing New Zealand

While the government has worked to develop a satisfactory export certification process, the wine industry has also taken the initiative to put its own uniform controls on the safety and quality of wine. The Sustainable Winegrowing New Zealand (SWNZ) program emerged in 1997 as a voluntary “best practice” model of environmental practices in the wine industry. The program is directed by New Zealand Winegrowers, an industry organization that formed in 2002 when New Zealand’s Grape

¹The farm gate price is the price of the product at which it is sold by the farm. It is typically lower than the retail price consumers pay in a store as it does not include costs for shipping, handling, storage, marketing, etc. (OECD Glossary of Terms)
Growers Council and the Wine Institute of New Zealand united. SWNZ provides to its members a model of business practices that improve environmental, social, and economic sustainability in both the vineyard and the winery. Members of the SWNZ program are updated on the newest techniques of sustainable land management through the dissemination of handbooks and field guides, as well as workshops held in each region. (“Membership”)

As New Zealand wine exports have increased, so has participation in sustainable winegrowing. In 2008 SWNZ membership grew by 50 percent from the previous year. (“Annual Report 2008”) The increase in membership may reflect a shift in thinking among Kiwi winemakers, who are gradually becoming more focused on producing and selling high-quality wines. Today, winemakers focus on quality, not quantity. They have replaced customary bulk wines like Muller-Thurgau, once used to expand production, with high-quality varieties that develop distinctly in the climate of their winemaking region. (Passmore)

**Membership Requirements**

SWNZ distributes to its members a handbook of the principles of sustainable grape growing; a guide to identify symptoms of diseases, pests, and grape disorders in the vineyard; and a scorecard document for keeping records of farming practices in the vineyard. Winegrowers at a member vineyard monitor their performance using the SWNZ scorecard, which serves as a record of vineyard management. The scorecard provides a range of recommended options for vineyard management. Members record their use of soils and fertilizers, ground cover and irrigation management, and treatment of diseases and pests. In 2002 SWNZ expanded its program to monitor sustainable practices in the winery.

Wineries obtain membership through a process similar to that followed by vineyards. Members record their management of waste (which includes packaging, disposal, and recycling), and their efficient management of water, energy, and other resources throughout the winemaking process. (“Membership”)

Vineyards and wineries are able to rate their performances using the scorecard and compare themselves to their competition. Once every three years an independent auditor audits member vineyards and wineries to verify that sustainable practices are being used. When a vineyard meets all requirements, it reaches “Accredited Vineyard” status, which allows the winemakers to use the Sustainable Winegrowing New Zealand vineyard signage. Similarly, wineries passing an external audit and meeting all of the wine accreditation requirements will be able to use Sustainable Winegrowing New Zealand endorsements on their brochures and websites to show their commitment to the environment. (“Membership”)

**Grove Mill Winery**

One SWNZ member, the Grove Mill Winery in Marlborough, is often noted as a fine example of a sustainable winery that has obtained its accredited status by incorporating innovations and land management programs into its winemaking process. For example, the winery designs its newest vineyards with longer rows, which cuts the amount of energy used by reducing the number of times the tractor has to turn around. Grove Mill’s grape growers are also seeking ways to use organic protection against diseases and pests.

The winery itself has a system that recovers waste heat for heating processes, such as raising the temperature of tanks for fermentation and heating water for cleaning. This system reduces the amount of electricity used in the winery. The refrigeration system has also been upgraded to use insulated refrigeration lines that require less energy. The entire winery and warehouse are insulated so that no additional energy is required to either heat or cool the warehouse. Furthermore, the winery’s “cold cellar” has increased Grove Mill’s total winery capacity to 3,100 tons. The cold cellar has a passive cooling system that pulls in cold air from the outside to cool down and maintain a constant temperature inside the winery, minimizing the use of electricity. The winery also packages its wine in bottles that are lighter and have thinner glass. As a result, the winery can use smaller cartons when packaging wines. As a result, 25 percent more wine can now fit into a container used to ship wine overseas. The efficiency of packing reduces the amount of carbon
emissions because customers are able to order more wine per container. ("Sustainable Practices") From growing grapes to recycling packaging materials, Grove Mill considers the entire life cycle of a bottle wine when assessing environmental impact.

**Red, White, and “Clean, Green” Wine**

New Zealand’s reputation as a beautiful, pure, and clean country attracts filmmakers and crowds of tourists year after year. The wine industry’s growing commitment to sustainability enhances and maintains this well-established and marketable image. Sustainable wines resonate with consumers who prefer to buy food products that have a low environmental impact. Consumer demand for carbon-footprint information on products is growing in Great Britain, New Zealand’s second-largest export market, according to the U.K. Department for Environment and Rural Affairs. (Gaffney) The Grove Mill Winery is an example of a business using New Zealand’s clean, green, and unique image to market itself as environmentally responsible. The Southern Bell frog, an endangered frog species that lives in the wetlands located next to the winery, is Grove Mill’s brand image.

Through its commitment to the environment, Grove Mill has enhanced its visibility on the international market. In 2006 the New Zealand Wine Company, producer of Grove Mill, Sanctuary, and Frog Haven wines, announced that its Grove Mill Winery had become the world’s first carbon-neutral winery. It achieved carboNZero® certification through a program developed and managed by Landcare Research New Zealand, a company that provides solutions and advice for sustainable development and land management. Grove Mill contributes no net carbon dioxide emissions to the atmosphere during the production and distribution of its wines. ("New Zealand Wine Company . . .")

The CEO of the New Zealand Wine Company, Rob White, said that the winery’s achievement has attracted positive media coverage and has helped increase sales in all of its major export markets. As he said, “Becoming carboNZero places us at the cutting edge of global sustainability and gives consumers an opportunity to choose a bottle of Grove Mill, Sanctuary or Frog Haven wine in the knowledge that we have minimized our impact on climate change.” ("World’s First Winemaker . . .") Grove Mill’s customers have responded enthusiastically. Sales to UK supermarket chain Sainsbury’s increased by 120 percent in 2006, and the company was asked to produce the supermarket’s house brand. The company has since expanded to other supermarkets in the UK and has begun talks with the U.S. retailer Whole Foods. ("World’s First Winemaker . . .")

**The “Food Miles” Debate**

More people are considering the impacts that food products have on the environment due to the increased attention given to climate change. More than half of UK consumers want information about the carbon footprint of the products they purchase and nearly half would switch to brands with smaller carbon footprints. ("44% of UK Shoppers . . .") Supermarkets increasingly are jumping on the “green” bandwagon and requiring that the products sold in their stores have some sort of carbon rating displayed on their labels. One way to account for the carbon emissions of a food product is to calculate its “food miles,” or the measurement of greenhouse gas emissions that result from transporting the product. In 2007 journalist Anna Shepard, who writes the Eco-Worrier column for UK newspaper The Times, encouraged consumers to consider the environmental impact of the products they buy based on the idea of food miles. She suggested, for example, that consumers buy French wine instead of New Zealand wine. Although the article did not have any effect on New Zealand wine sales, the comments have sparked a debate on the idea of food miles. (Shepard, as cited in Gaffney) The food miles concept threatens New Zealand exports because around one-third of New Zealand’s food and beverage exports are destined for EU markets located thousands of miles away. (Saunders et al.)

New Zealand government officials and wine producers have voiced concerns that the
food miles concept misleads consumers because it focuses on only one aspect of the total energy use in the production system: transportation. (Gaffney) They point to a 2006 study conducted by researchers at Lincoln University in Christchurch, New Zealand. The researchers calculated the total energy use and carbon emissions associated with the production and delivery of four New Zealand products — milk solids, lamb, apples, and onions. When they compared the energy intensity of food production in the UK and in New Zealand, they found that New Zealand was more energy efficient, even after including the transportation of the products to Great Britain. (Saunders et al.) The report shows that entire production systems, not just transportation, are the major contributor to the differences in greenhouse gas emissions and energy use.

The consensus is gradually forming that labeling a product for its food miles is an inadequate indicator of environmental sustainability. A British government agency, the Department for Environment, Food and Rural Affairs (Defra), recently created a unified system of measuring the food miles of various products, including wine, in case the government intends to someday require that information on labels. The standard, called PAS 2050, helps businesses measure the carbon emissions in their goods and services throughout their entire life cycle, from sourcing raw materials, to manufacture, distribution, use, and disposal. (“UK Launches Carbon Footprint Standard”)

**Sustaining Success**

Even in light of the UK’s new standards, SWNZ and New Zealand winemakers must continue to update their policies according to changing world standards and be able to defend the integrity of their product. Consumer perceptions of what constitutes a “sustainable” food product are constantly changing and influenced by the media, as seen in the food miles debate. In 2007, the Oregon Wine Board partnered with Full Glass Research, a group that performs research on the wine industry, its market, and consumers, to conduct a study on consumer perceptions of sustainable wines. The study, released in May 2008, found that roughly half of all wine consumers are unsure of the exact definition of a sustainable wine. The study also found that to wine consumers accessibility is a key barrier to purchase: they often either do not have access to sustainable wines or lack the tools to identify wines as being sustainable. Placing logos on bottles to identify them as sustainable is sometimes not enough to convince consumers that a product is truly “green.” Among core wine consumers, 45 percent agree that many products claim to be sustainable without real meaning or backing. (“Core Wine Consumers Interested . . .”)

If consumers perceive that the industry’s claim of sustainability is false or weak, consumer backlash could be devastating. One way winemakers can ensure that this does not happen is by participating in third-party certification to ensure consumer confidence and transparency. (“Core Wine Consumers Interested . . .”)

Since the New Zealand Wine Company’s Grove Mill Winery achieved carbon neutrality in 2006, the company has been recertified with Landcare Research to align with the new British PAS 2050 standards for measuring the life cycle emissions of products. The recertification process was independently audited by Deloitte (NZ) to ensure its integrity. (“NZWC Achieves Carbon . . .”) New Zealand wineries and vineyards must hold themselves accountable to evolving environmental standards.

Collaboration with other stakeholders in the New Zealand wine community is also necessary to continue its trend of success. The New Zealand government, the wine industry, and members of the academic community must continue to fund and apply innovations to the bottling, packaging, transportation, and recycling aspects of a bottle of wine’s life cycle. For example, one report published in the *Australian & New Zealand Wine Industry Journal* identifies recycling as a weakness in the wine production cycle. The wastes that wineries produce include plastic, paper, cardboard, aluminum, and glass. Instead of being

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3 The study “Food Miles — Comparative Energy/Emissions Performance of New Zealand’s Agriculture Industry” was conducted by Professor Caroline Saunders, director of Lincoln University’s Agribusiness and Economics Research Unit, Andrew Barber of the Agribusiness Group, and research assistant Greg Taylor. It was published in July 2006 and then updated in a second report that focused solely on the dairy industry the following year.
recycled back into the loop of the wine production cycle, the wastes are disposed in landfills. The authors of the study urge the wine industry to advocate government policies to subsidize and improve New Zealand recycling programs. (True and Creasy, p. 92) An improved recycling system will enhance sustainability efforts throughout the whole life cycle of a bottle of wine.

Another opportunity for collaboration exists on a global scale. New Zealand Winegrowers worked with similar industry organizations in South Africa, California, and Australia to develop the International Wine Industry Greenhouse Gas Accounting Protocol and a calculator that measures the carbon footprints of winery and vineyard operations. (“Wine Institute and International Partners . . .”) The protocol standardizes sustainable winemaking practices and emissions accounting in the top wine exporting countries. The international standards could also possibly provide some clarity and consistency for consumers drinking wines from these four regions of the world.

Moving Forward

In 2008 New Zealand experienced a record-breaking harvest that will undoubtedly bring about a significant increase in exports. To keep up demand, wine exporters will have to expand into new markets and try to attract foreign customers. In October 2008 a free trade agreement between New Zealand and China went into effect. The deal reduced trade barriers to allow an easier exchange of goods and services. This makes Asia an attractive market for exports. (“Annual Report 2008”) However, the wine industry may face new challenges and criticisms in different cultures. Already, New Zealand wines have encountered some potentially damaging perceptions in the Asian market involving the use of screwcaps in bottling wine.

The majority of New Zealand winemakers are proponents of sealing their wine with screwcaps. In May 2001, the “New Zealand Screwcap Wine Seal Initiative” was launched, and by 2006 it was estimated that 90 per cent of all bottled wines were sealed with screwcaps. New Zealand winemakers seem to be in agreement that screwcaps increase the quality of their wines, although there are claims that they lead to the opposite effect. (“New Zealand Screwcap Initiative”) Screwcaps are also the greener option because they can be recycled as aluminum, saving up to 95 percent of the energy needed to produce new aluminum. (“Why Screwcaps?”) Screwcaps encounter a problem when they reach the Asian markets, however, because Asian consumers seek expensive wines of sophistication and high status. To them, corks mean quality; so high-quality, screwcapped New Zealand wines may be perceived as cheap. (Stewart) To overcome this misconception, the New Zealand wine industry should develop an educational campaign to communicate the benefits of screw caps into marketing programs aimed at Asian countries.

In addition to criticisms and misconceptions that threaten consumer confidence, the New Zealand wine industry should also consider the financial impact of a worldwide response to climate change. One concern is that the wine industry may experience costs resulting from the implementation of emissions trading schemes in New Zealand and countries throughout the world. While the wine industry may escape direct carbon emissions regulation, it would be indirectly affected as upstream suppliers of electricity and agrochemicals and downstream suppliers (such as transportation services) become regulated. In this scenario, cost increases in fossil-fuel-based fertilizer and pesticides will make organic farming more attractive for vineyards. Winemakers will want to reduce their dependency on fossil fuels by contracting from energy suppliers that use renewable sources. (Colman and Päster) As rising fuel costs and the increasing cost of wine production threaten to undermine profits, more winemakers should choose the green route.

When the New Zealand Wine Company announced that its Grove Mill Winery achieved carboNZero recertification, CEO Rob White said: “We view sustainability in its adopted meaning of ‘being able to do tomorrow, what we do today.’ If the rate of global warming . . . continues as predicted by many observers, we will struggle to grow grapes of the quality that Marlborough has become famous for.” (“NZWC Achieves Carbon Neutral Recertification”) This statement reflects a growing sentiment in the wine industry that companies should continue
to invest in sustainability not only to gain a marketing advantage, but also to address environmental and financial concerns. Continued collaboration among various stakeholders in the global wine community will help defend the credibility of the industry’s commitment to a high-quality product achieved through sustainable farming and production methods.


