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The quality of sustainability: Agroecological partnerships and the geographic branding of California winegrapes

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Abstract

Quality and sustainability are both socially constructed, ambiguous terms, but they have not been heretofore linked in the rural studies literature. The “quality turn” has received particular attention from researchers for its potential to organize linkages among various forces in agrofood systems, providing more income to producers by appealing to affluent, reflexive consumers. A distinct line of rural research has attended to the challenge of agro-environmental pollution and regulation, but this research trajectory has been subsumed under the broader paradigm of sustainability. This article seeks to contribute to discussions about quality in the agrofood sector by analyzing the potential of fusing rural resource protection practices with place-based marketing of enhanced quality, drawing from an empirical study of the California winegrape industry. In several California commodities, agroecological partnerships are becoming the chief vehicle for extending sustainable agricultural practices. California’s winegrape farmers have undertaken more partnerships to greater effect than those of any other US crop, and they are now discursively linking their sustainable farming practices, environmental quality, and wine quality. This marks a new linkage of two heretofore discrete social imaginaries. This article argues that “quality” is a term that can conceptually link increasing consumer demand for differentiated product taste with increasing regulatory pressure for environmental protection. Synergistic benefits from such a linkage have the potential to strengthen rural development initiatives. Making progress toward sustainability requires collective action on the part of producers, and in some commodities, may mesh well with efforts to enhance foodstuff quality.

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1. Introduction

“Quality” is a particularly ambiguous term, but this property may, in fact, render it more useful for linking two distinct trends in rural studies: distinctive, local, or differentiated food, and sustainability in farming and environmental resource management. Many rural development scholars have recently examined the “quality turn,” investigating how differentiated food products, appealing to affluent, reflexive consumers, can provide additional income to farmers and rural areas (Goodman, 2004). These have sought to bring the broader “cultural turn” and associated sociologies of consumption to bear on rural sociology and agrofood geography (Goodman, 2003; Goodman and DuPuis, 2002). The “quality turn” has received particular attention from researchers for it has the potential to organize linkages among various forces in

agrofood systems: rising expectations among affluent discerning consumers (Murdoch et al., 2000), food scares and consumer food safety concerns (FitzSimmons and Goodman, 1998; Stassart and Whatmore, 2003), the presence and representation of nature in food products (Goodman, 1999; Murdoch et al., 2000; Murdoch and Miele, 1999), and producer ambitions for a greater share of the food economy (Ilbery and Kneafsy, 2000). Debates over alternative agrofood networks, food relocalization, and the turn to “quality” food production are thriving (Watts et al., 2005), with a heavy emphasis on the transformative potential of embeddedness and local relationships of trust to stimulate change in the agrofood sector (Winter, 2003). To date, no research has documented the impact of increasing sales of quality foodstuffs directly back to concepts of sustainability.

At the same time, a distinct line of rural research has attended to the challenge of agro-environmental pollution (Clark and Lowe, 1992), and associated policies and

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regulation (Lowe et al., 1997). More recently this research trajectory has been subsumed under the broader paradigm of sustainable rural development (Ilbery et al., 1997), examining the role of environmental regulatory initiatives and divergent conceptualizations of social nature (Marsden et al., 2001). This literature has fretted over the impact of agro-environmental regulation, especially the economic burden it places on farmers and its contradictory outcomes (Marsden, 2001). To reshape and redirect the undesirable consequences of agro-environmental regulatory burden, scholarly interest has grown in an alternative integrated, agroecological framework (Altieri, 1989; Warner, *in press*). Some linkages between sustainable rural development and agroecology are beginning in Europe (Marsden et al., 2001), but no scholarly work on these topics has thus far integrated the quality turn into its consideration.

In the US, many rural regions are under increasing pressure to address agricultural pollution (US Geological Survey, 1999; Warner, *in press*), but government agencies here do not provide coherent rural environmental planning to address this. Consequently, initiatives for agricultural pollution prevention are being led by farmers, farmers' groups, and scientists (Warner, 2006). In several commodities in California—and other states—agroecological partnerships are becoming the chief vehicle for extending sustainable agricultural practices (Swezey and Broome, 2000; Warner, *in press*). California's winegrape growers have undertaken more partnerships to greater effect than those of any other US crop, and they are now discursively linking their sustainable farming practices, environmental quality, and wine quality (Dlott, 2004).

More than any other sector of US agriculture, the California winegrape industry has invested time, money, and effort in collective enterprises to reach their growers about winegrape quality and issues of sustainability, using pre-existing, place-based networks of production to foster social learning about resource protective practices. Premium winegrapes in California are grown in distinct regions highly charged by environmental politics. Growers here have found the value of cooperative initiatives to improve their practices and represent the sustainability of these practices. More than any other group of California growers, winegrape growers are operationally defining sustainability as agricultural enterprise viability, environmental quality and product quality. Winegrape partnerships constitute and intensify cooperative social relations as a way to defend the social space of winegrape production in the face of social criticism of and regulatory pressure on their production practices. These partnerships demonstrate the potential of producer-led cooperative initiatives to substantially reduce agricultural pollution.

This article seeks to contribute to discussions about quality in the agrofood sector by analyzing the potential of fusing rural resource protection practices with place-based marketing of enhanced quality, drawing from an empirical study of the California winegrape industry. It argues that "quality" is a term that can conceptually link increasing

economic demand for differentiated product taste with increasing grower interest in sustainable farming practices. California winegrape growers are conceptually and discursively fusing product and environmental quality, marking a new linkage of two heretofore discrete social imaginaries. This paper provides an early report from California in the interest of contributing to a trans-Atlantic dialogue about the potential of linking food product and environmental quality, and thus contributing to conceptualizations of sustainable rural development.

This article begins with a summary and discussion of efforts to bring theory to bear on the relationships between quality, sustainability, and geographic branding. Secondly, it describes the geographic branding of wines in California, and the dynamic relationship between premium quality winegrapes, new vineyard development, and tensions on the urban/rural interface. Thirdly, it investigates the opportunities and vulnerabilities associated with product differentiation by geographic branding. It then describes how the California winegrape and winery industries have created agroecological partnerships to promote sustainable production practices, convey their message of environmental and product quality to regulators and consumers and enroll all actors in environmental resource protection. Wine is an unusual and highly differentiated commodity, but the trends emerging in this sector provocatively demonstrate potential strategies for articulating resource protection with quality marketing initiatives and the viability of agriculture in the industrial world.

The empirical evidence in this article is based on 2 years of field work with participants in winegrape partnerships and a review of associated documentation. Data collection consisted of 26 semi-structured interviews with winegrape growers, agricultural consultants, winery personnel, and environmental regulatory staff; 4 focus groups with 30 partnership members; participant observation in the field with 4 consultants inspecting for crop pests; and observation of 8 field days and workshops. This data formed a case study in a Ph.D. dissertation, which has resulted in a book about the phenomenon of US agroecological partnerships (Warner, *in press*).

2. Quality, sustainability, and farming in place

Both quality and sustainability are highly ambiguous and socially constructed terms (Allen, 1993a; Goodman, 2003). In the past, quality was commonly understood in terms of taste, ripeness, freshness, or flavor, as defined by actors involved in production, but recent consumer displeasure with the health, safety, homogeneity and environmental impacts of industrial farming finds expression through seeking alternatives to mass-produced, undifferentiated foods. Foodstuffs can now be defined as quality, meaning local (Dupuis and Goodman, 2005; Hinrichs, 2003), traditional or produced in small scale (Ilbery and Kneafsy, 2000), fairly traded (Renard, 2003; Whatmore and Thorne, 1997), or perhaps "sustainable."

As Ilbery and Kneafsy (2000) underscore, however, quality is a highly subjective term. Food producers, distributors, and consumers may perceive product quality quite differently. An increasing number of consumers are demonstrating interest in purchasing foods that reflect their environmental values (Barham, 2002), and producers are positioning their products to appeal to these consumers. Producers and marketers generally perceive economic opportunity in differentiating their products through changes in farming practices, association with a local food tradition, enhanced food safety, or conveying more information about these to consumers.

Ilbery and Kneafsy (2000) proposed four criteria to conceptualize the marketing of food quality: achieving certification by an off-farm organization, association with a desirable location or historical tradition of production, attraction of consumer interest, and specification of production method. They emphasize all of these are socially constructed, whatever blend of “objective” (measurable) indicators of quality, or “subjective.” Perhaps a more useful distinction would be distinguishing between criteria that can and cannot be tied to measurable indicators. “Objective” criteria, such as human and environmental health claims, can be traced to measurable performance at some point in the agrofood system. Objective criteria form the basis for quality claims, but the subjective characteristics reveal how producers wish to represent their product in the marketplace, and what traits they use to construct their quality claims.

For foodstuffs to assure the consumer of some objective criteria while traveling beyond local, embedded social relationships, mechanisms must be devised, such as geographic branding or a specialized label. The proliferation of labeling schemes represents a network strategy as an alternative rural development scheme (Murdoch, 2000; Whatmore and Thorne, 1997). Labels try to persuade consumers of product quality, and justify the payment of any additional price. Labels are an attempt to extend networks of trust beyond face to face relationships, often through the conventional food supply chains. Interest in specialized labels has coincided with the “quality turn” in agrofood studies. Organic agriculture has emerged as the best known alternative food label (Guthman, 2004b), but as Guthman (2004a) has argued, certification and labeling schemes may create perverse incentives for growers. Despite the claims of being alternative, much labeled food mimics conventional foods quite closely (Buck et al., 1997; Guthman, 2004a; Whatmore et al., 2002). Barham (2002) proposed a theory of values-based labeling that presents these as initiatives to create ethical space within the marketplace. Drawing from the work of Karl Polanyi, she recommends investigating these labels as a social movement. Non-governmental organizations are using specialized labels inferring quality to enhance farmer income based on human values (Allen et al., 2003), yet many producers are labeling their foods to capture more income at the farmgate by carrying knowledge about food

products through marketing networks. Initial ambitious quality and ethics claims, exploiting niche marketing opportunities, are being joined by more pragmatic efforts to label foodstuffs through conventional markets (Codron, 2006).

Sustainability, like quality, carries emphases that differ according to one’s position in the agrofood system. Concern about the environmental impacts of agriculture has given rise to arguments for making agriculture more sustainable, but without necessarily resolving significant contradictions in that term (Allen, 1993a). Sustainability entered agricultural discourse about two decades ago, and this term too was socially constructed, largely by actors with an alternative vision, at least initially (Lockeretz, 1997). As Buttel (1997) argues, sustainable agriculture can be approached through three lenses: as a social movement (Barham, 1997; Hassanein, 1997; Vos, 2000), as a policy goal (Youngberg et al., 1993), and a set of technoscientific practices (Röling and Wagemakers, 1998; Warner, 2006). Since the term sustainability has been increasingly adopted by US agro-scientific (National Research Council, 1989, 2003) and economic institutions (Allen, 2004), it has generally been used in this narrow, technoscientific sense (Warner, *in press*). “Sustainability,” like efficiency, conveys no inherent meaning. Without defining what is to be sustained, for whom, and for how long, the term may obscure more than it illuminates (Allen, 1993b). It is used by actors within the agrofood system seeking to represent themselves as environmentally responsible, and thus meriting a premium price and regulatory leniency. Scholars now describe this as the commodification of sustainability (Allen and Kovach, 2000; Guthman, 2002).

In the US, most of the pressure on agriculture to prevent pollution is applied through national and state regulatory agencies. Agriculture here is the primary source of non-point source water pollution (US Geological Survey, 1999), and most regulatory enforcement against agriculture is being pursued under the US Federal Clean Water Act (Warner, *in press*). Until recently, conventional agriculture has been able to deflect criticism of its polluting practices with discourses about the virtue of “family farms” (Browne et al., 1992) or the exceptional place of agriculture in US society (Andrews, 1999), but the cumulative evidence of environmental impacts at the regional level is beginning to break down this discourse, and is to some extent driving changes in practices.

Because of its knowledge-intensive character, sustainable agriculture requires cooperative social relations, although insufficient work has been done on this topic (Thrupp, 1996; Warner, *in press*). The Netherlands appears to host the most developed collection of environmental cooperatives, local farmers’ associations that promote sustainable agriculture and rural development (Renting and Van der Ploeg, 2001). Dutch environmental cooperatives and California’s agroecological partnerships share a remarkable number of traits: they began about 1992 in large part as a response to increasing regulatory pressures; they

emerge from on-going cooperative efforts; the specifics of their social organization are highly diverse, influenced by the commodity produced and their specific regional context; they emerge as farmer-initiated responses to re-assert some autonomy over their farming decisions. Participating farmers in both countries recognize the importance of fostering greater accountability and trust among the public and regulatory agencies. Wiskerke et al. (2003) argue that Dutch environmental cooperatives represent a new mode of rural governance. Renting and Van der Ploeg (2001) present them as a new form of institutional relations between the state and agriculture, with the potential to reconnect nature, farming and society. Despite the similarities between these Dutch and California initiatives, the broader claims about agriculture, governance and society made about Dutch cooperatives have limited applicability to the US situation. Goodman (2003) observed a significant cross-Atlantic divergence in how researchers link their case studies of alternative agrofood networks with meso-level analyses. European researchers have forged closer relationships with government officials, and are able to recommend incremental institutional changes, while North American rural research is not generally considered by policy makers (Goodman, 2003).

California's agroecological partnerships have particular appeal to growers who perceive agroecologically informed practices as defense against agro-environmental regulatory action, and as a legitimation strategy essential for outreach to critical neighbors. They also see it having the potential to gain economic advantage by being able to represent themselves as more "sustainable." There is no precise nor fixed definition of sustainability or sustainable practices, but the scale, reach and impact of these partnerships has been so great that they have become the primary strategy for extending alternative, agroecological practices in California (Warner, 2006). Growers and their organizations have simultaneously engaged in developing more sustainable practices while reaching out to other growers, regulatory agencies and neighbors concerned with pollution. These partnerships are a California version of "Third Way" agriculture (El Titi, 1992), signifying a pragmatic and opportunistic blend of organic and conventional/chemical strategies. They are a form of "Integrated Farming Systems" (Morris and Winter, 1999), designed to shape change in agricultural knowledge systems. California partnerships present an agroecological approach to farming, which has appeal to a broad section of farmers (Brodt et al., 2004). Partnerships have helped growers cope with the extra risks and the additional costs of expert monitoring associated with agroecological strategies, but once partnership funding ends, a significant number of growers revert to previous farming practices (Warner, in press).

The literature addressing the "quality turn" has examined the potential for this plastic term to be extended back to farm and agricultural landscape management. Sustainability initiatives in the rural studies literature have not

examined how producers are perceiving quality to link agroecological practices, efforts to counter criticism, and consumer perception of their product. The agroecological partnerships in the California winegrape sector described in subsequent sections of this paper represent practice leading the theorization of the relationship between quality and sustainability.

3. Quality regions in California winegrape production

California produces roughly 90% of US winegrapes and wine, valued at \$1.8 and \$12 billion, respectively. The winegrape and wine sector collectively contributes more than \$33 billion to the state economy (Motto Kryla & Fisher LLP, 2000). Hectarage expanded from 60,000 in 1975 to 90,000 in 1982, to 185,000 in 2000.¹ The most important distinction in California winegrape geography is that between the mountainous coastal regions, and the long, flat Central Valley. Beginning with Napa, growers and vintners discovered that the coastal counties offered soils and micro-climates amenable to producing a range of premium varieties, and the dramatic diurnal swings in autumn temperatures necessary to produce acids and flavor content of grapes. This has resulted in an expansion of vineyards in the coastal counties, even as most other crops shrank here in the face of suburban and exurban sprawl.

The geographic branding of winegrapes has been a key cooperative strategy of California winegrape growers and wine makers for almost 40 years (Lapsley, 1996). Inspired by the French use of appellation, they have successfully convinced the wine-consuming public that a significant difference in wine quality can be traced back to the location and agroecological conditions of grape production. Geographic branding is now a popular strategy for communicating with increasingly educated and affluent wine consumers (Bisson et al., 2002). The branding of California winegrape regions required cooperation between winegrape growers and wineries, and their economic successes have stimulated continuing collaboration, to an unusual degree. "Winegrapes are a product of a place," in the words of John Clendenen, a Sonoma County vineyard manager. California winegrape growers are acutely aware that they

¹This data is from the California Agricultural Statistics Service reports, various years. A word of warning about winegrape statistics is in order. There is disagreement over winegrape acreages statistics due to several factors. Growers are not required to report acreage until it begins bearing, and even then, not all acres are reported. Acreages are reported separately to the Grape Crush Districts, and to the County Agricultural Commissioners. Grape Crush Districts sometimes are coterminous with counties, but not always, especially not in the San Joaquin Valley. These different boundaries frustrate attempts to reconcile these sources of information. Reporting acreage to agricultural commissioners often sets in motion increased taxes, and this serves as a disincentive. Grape Crush District reports are more reliable, but Jim Lapsley (pers. commun.) is cautious about any winegrape acreage. He believes tonnage crushed is the only meaningful measure for relative changes in acreage, but with annual variation in crop, this figure is problematic as well. Counting winegrape acreage can have highly charged political ramifications (see below).

are paid on the quality of their grapes, and that this is inseparable from their location of production.

The notion of appellation, or a region of production, developed originally in France, is the best known geographic branding (Barham, 2003). France has an array of government-approved geographic designations with varying degrees of specificity and quality reputations. European countries have created other branding systems, known as Protected Designation of Origin (PDO) and Protected Geographic Indications (PGI), for a wide range of other regionally specialized agricultural products. Geographic branding represents the fusion of social practices, political coordination and biological particularity (Moran, 1993). This kind of branding communicates more knowledge about nature-in-place, even if it is commodified, than generic foodstuffs do.

California's specialty crop growers have a very long history of intensive cooperation to improve the profitability of their specialty crop production (Stoll, 1998), but winegrape growers have moved most aggressively to enhance their farmgate income by geographic branding. These geographic designations are neither as static nor as clearly regulated in the US as in France (Moran, 1993). Here the process began informally during the mid-part of the past century as Napa and California wine producers recognized the opportunity to enhance their reputation of quality by providing more information to consumers (Lapsley, 1996). The US government only began legal designation of American Viticultural Areas (AVAs) in 1978. AVA designations are managed by a bureau in the US Department of Treasury. As of 2001, there were 145 appellations in US (The Wine Institute, 2001), and this number continues to grow. In California new AVAs are sometimes designated within previous areas. The north coast counties of Napa and Sonoma have 15 and 13 AVAs respectively, and most of these have been nested within earlier, county-wide designations.

Casual use of the terms appellation and terroir in the US is generally misleading. Many actors in the California winegrape industry use them interchangeably with AVA. This is not correct because the US does not have specific, legal definitions of appellation or terroir. European countries carefully regulate the geographic branding of winegrapes and wine, in some cases specifying the size of vineyards, the varieties, the mix of varieties, the spacing of vine rows, the cultural techniques, and yield. In contrast, an AVA designation merely represents the regional production of the winegrapes. The California winegrape industry has begun to use the terms appellation and terroir, but they do not carry the same historical, cultural, viticultural or enological meaning as in Europe (Barham, 2003).

Four main material factors determine quality wine: environmental conditions of production, varietal selection, vine management, and winemaking skills (Gladstone, 1992). Fifty years ago, winegrape production was largely indistinguishable from table grape or raisin production, but

this began to change when winegrape growers recognized their potential to produce quality wines and US consumers began to develop a taste for them. Two key events prompted California winegrape growers to turn toward premium production. In 1976, French judges chose two California wines as superior to their French counterparts for the first time (Heien and Martin, 2003). In 1991, a medical study indicated that moderate consumption of red wine could result in health benefits despite high fat intake, popularly known as the "French paradox" (Bisson et al., 2002). These events prompted increased interest in wine consumption by the US professional classes and social elites, who were willing to pay from their additional disposable income. The California wine and winegrape industries have promoted "wine consumption as part of a healthy lifestyle" while at the same time proclaiming their quality as among the best in the world. The objective merits of these quality claims are difficult to evaluate, but it is quite clear that the premium price that some consumers are willing to pay for quality has driven a dramatic expansion of vineyards in the state, at least in the coastal counties.

Place is especially important in winegrape production because soils and climate cannot be modified by humans, and thus geographic branding has become increasingly spatially specific. Jim Lapsley argues that California winegrape production is in its fourth era or stage of development since 1950 (Lapsley, 2001).

- (1) The movement from fortified and dessert wines to table wines (1950s–1960s).
- (2) The movement from generic table wine to varietal wines (1970s–1980s).
- (3) The movement from varietal wines to "appellation" (AVA)-based wines (1980s–present).
- (4) The movement from "appellation"(AVA)- to vineyard-based or "terroir" wines (1990s–present).

This movement toward increasing geographic specificity and segmentation has been facilitated by social, economic, and scientific shifts by actors within the winegrape and wine industry, and broader society. California still produces some cheap sweet and fortified wines, but these are possible with virtually any varietal and minimal viticultural expertise. Economy wines (retailing less than US\$7 per bottle) still occupy about two-thirds of the US market (Bisson et al., 2002), but premium and ultra-premium wines (costing US\$20 up to hundreds of dollars per bottle) offer growers and vintners the opportunity to capture much more profit. A Central Coast winegrape grower said: "Wine grapes are differentiated by region and grower input, much more so than most commodities... . (E)ven though there are (other) commodity growers who can probably differentiate themselves based on bottom-line quality, it's hard to get paid for that... . In the wine industry, you can be paid for differentiated quality." The increasingly specific geographic branding of wines makes sense if they have distinct sensory qualities, and they can

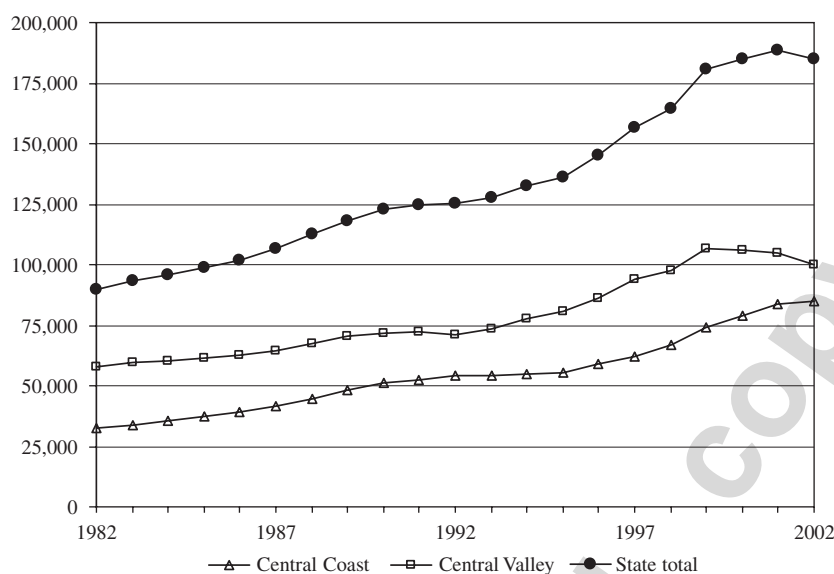


Fig. 1. California winegrapes in hectares, 1982–2002.

thus capture a quality price premium. The pursuit of this quality has triggered the planting of more vineyards, but also a shared commitment in the winegrape and wine industries to exchange information about improved viticulture and wine making.

Most of the growth in vineyards took place during two periods: the late 1970s and late 1990s. In the 1990s, California winegrape hectareage expanded 24%, with almost half of this in just six coastal counties (Fig. 1). The economic benefits of the premium wine market are reflected in the rising price paid per ton in the coastal regions (Fig. 2). The value of winegrapes in Napa and Sonoma Counties doubled during the 1990s. Inferior quality Kern County winegrapes were worth less in 2002 than in 1992.

4. The quality of sustainability

The expansion of vineyard acreage brought in new growers, new capital, and new ideas to the coastal counties. Some of these new growers came to winegrape growing for non-economic reasons, especially the social status that comes from producing wine (Conaway, 2002). Unfortunately for the industry, the best regions for winegrapes are also highly desirable exurban real estate. As the greater metropolitan areas of San Francisco and Los Angeles have sprawled out onto the coastal region's agricultural landscape, they have displaced almost all other crops; only premium winegrapes have the ability to bring in sufficient farmgate income as to compete with housing. Napa harvests the fewest average tonnes per hectare, about 6, but captures the highest per ton income, resulting in an average of US\$18,500 gross income per hectare. At the lower end of the premium districts, Lodi averages 16 tonnes per hectare, and with per ton prices averaging US\$500, growers here capture gross income of roughly

US\$8000 per hectare. The rising prices received by growers of premium winegrapes have pushed other commodities out of coastal counties. The non-agricultural residents of these regions resented and resisted vineyard expansion, threatening the viability of winegrape growing. This section relates how the same landscape that provides opportunities related to geographic branding—integral to the winegrape quality premium—also exposes growers to greater environmental criticism of vineyards precisely because their monocultural production has become so concentrated in specific places.

The Napa Valley is the most famous location of wine production outside of Europe (Conaway, 1990, 2002; Lapsley, 1996). The valley itself is actually quite small, roughly 50 km long and 8 km wide, but influential within the winegrape industry far beyond its relative size. Since the 1950s, Napa Valley winegrape growers and wineries have promoted wine as an American beverage and the market for premium wines. They have pursued enhanced quality with a near-religious zealotry, and have been consistently rewarded economically for this (Lapsley, 1996). They have also learned the value of cooperative action in branding their place. They learned that the more they are collectively able to enhance the reputation of Napa wines, the more they will individually be rewarded. Robert Mondavi was one key leader in this movement. After visiting European vineyards in the 1960s, he launched an incentive system for quality grape growing by teaching growers how to recognize wine quality, and the conditions of production that helped create it (Mondavi, 1998). Napa winegrape growers invested in quality production in anticipation of receiving future profits, a strategy possible in part because of the capital this agricultural sector has attracted. There are now 12,000 hectares of vineyards in Napa, and they produced US\$221 million in 1999, or 97% of all agricultural revenue in the county.

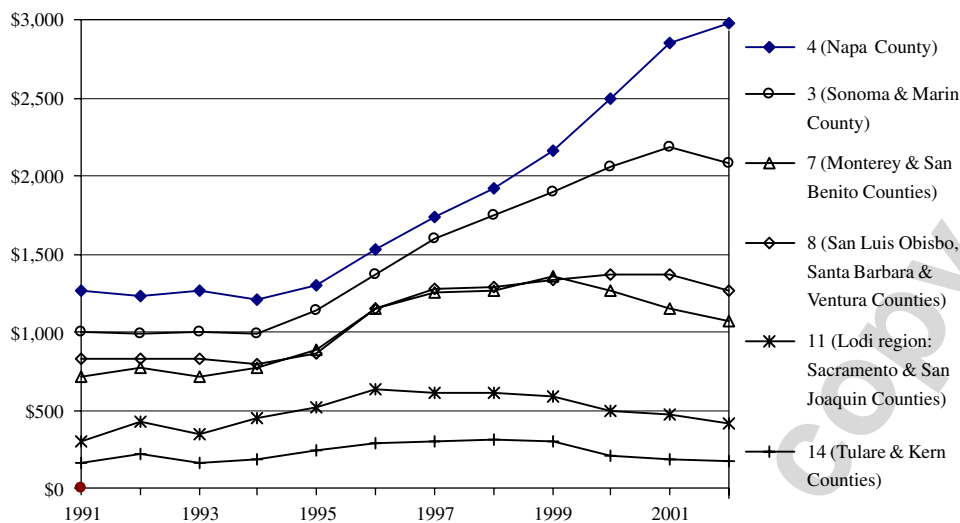


Fig. 2. California winegrape crush price per tonne, by selected crush district.

Due to its relatively small size, the Napa Valley as a place has a strong regional identity. Vineyards cover the valley floor, but the hillsides still host natural vegetation. No place in the valley is without a beautiful view of the hillsides, and this fosters a strong sense of place (Poirier-Locke, 2002). Environmental conflicts entered a new stage when the valley floor was “planted out” in the early 1990s, and growers increasingly began to plant vineyards on the steep and erodible hillsides, triggering intense public controversies over land use. Several of the new hillside vineyards did not include adequate erosion control measures, and some spectacular erosion events have taken place. In 1989, 2000 tonnes of sediment eroded into Bell Reservoir from one recently planted vineyard, contaminating the public water source for St. Helena (Poirier-Locke, 2002). The Napa River routinely violates water quality standards, and this will apparently result in requirements for vineyards to be set back from riparian zones (Conaway, 2002).

These events became the flashpoints in a protracted struggle over the best way to protect Napa’s environment and winegrape industry. They became bitter and fractious because there are many different views as to the exact nature of the threat. Some see the vineyards as the cause of environmental problems, while others see vineyards as the last economically viable crop prior to converting the land to housing. Environmental activists have demanded local land use regulations, angering property rights activists. Vineyards are agriculture, but most wineries operate at an industrial scale, and local officials engage in heated public debates about regulations on winery sales of objects unrelated to agriculture, such as T-shirts and books. These may seem like an innocuous consideration, but with five million visitors clogging rural roads, non-grape growing residents are frustrated.

All parties claim to be pro-environment and pro-agriculture, but subtle variations in perspective result in

strongly conflicting views. Some of the fissures in Napa can be found between: small and large growers; established and new growers; winery owners and grape growers; winery owners with vineyards versus those without; environmentalists who see agriculture as pivotal to forestalling sprawl in the valley and environmentalists who are infuriated by the winegrape industry and see it as an environmental villain. Napa critics have called winegrape growing “alcohol farming,” and vineyard expansion “graping the land” (Conaway, 2002).

Winegrapes became Sonoma County’s most valuable crop in 1989. Winegrapes have been grown in Sonoma County for over a century, but as other crops have been forced out due to development pressures and declining prices, premium winegrape vineyards have taken some of their place. From 1994 to 1999, bearing Sonoma winegrape acreage jumped over 20% to over 20,000 hectares, and winegrapes now account for just over 60% of the total value of agricultural production of the county. Land use battles began earlier in Napa, but have since spread to Sonoma County (Guthey et al., 2003), and now echo throughout the coastal counties where grapes are grown.

Anger at vineyard expansion in Sonoma County had been building throughout the 1990s, with water use and oak woodland loss being the source of particular irritation (Friedland, 2002). Controversial vineyard development projects have used massive earth moving equipment to radically re-configure hillsides (Cobb, 1998; Friedland, 2002). Anti-vineyard environmental activists began a campaign to limit vineyard expansion in the county, and received a big boost when a university researcher discovered that the County Agricultural Commissioner had undercounted new vineyard hectareage by almost 20% (Merenlender, 2000). The adjusted numbers were reported on the front page of the *Santa Rosa Press-Democrat* (1 June 1998) and galvanized opposition to further vineyard expansion.

The Central Coast region of Santa Barbara, San Luis Obispo, and Monterey Counties is the latest to enter the premium winegrape market. Commercial winegrape production began here in the 1970s when the boom in varietal wines coincided with a change in the tax law structure that allowed corporations and individuals to write off investments in perennial crops (FitzSimmons, 1983). Major wineries discovered parts of the Central Coast offered growing conditions similar to Sonoma. Winegrapes have expanded dramatically, and much of the new vineyard land has been converted directly from grazing, e.g., not first to other, lower value irrigated crops. Since the original vineyard developments 25 years ago, many large wineries bought land or contracted for grapes to be grown here, and functional control of the winegrape landscape is quite concentrated. Collectively, five major wineries farm or contract to have managed 7250 ha, and buy from 7700 ha.² This constitutes 42% of the region's 35,000 ha production. When residents began to campaign for vineyard development restrictions (Cobb, 1998), the region's winegrape growers and vineyards recognized the importance of public outreach about their efforts to promote sustainable viticulture.

California's Central Valley is still home to half the state's winegrape hectareage, however. The long, hot summers are helpful for growing large volumes of sweet grapes (many times the per area yield of Napa), but are not well suited for growing varietal wines. About 20 years ago, however, growers in the Lodi region recognized that they could take advantage of the coastal breezes passing through from the Sacramento Delta over their vineyards to produce higher quality wines. This required them to graft over their vines to varietal grapes, an expensive gamble, but one that has paid off. The Lodi region has been able to differentiate itself from other Central Valley production areas, and capture some of the quality market. Its vineyard hectareage has more than doubled over the past 15 years. The grower organization that coordinated winegrape quality improvement simultaneously addressed issues of environmental stewardship.

Vineyard expansion in California has come at the price of public perception. A Central Coast vineyard manager said:

...I've been (a vineyard manager for) 30 years. For more than 20, I would say vineyards were considered the ecological friend of the state of California when it came to agricultural production endeavors. And somewhere in this growth period...we became an environmental concern.

A Napa vineyard manager reported:

...what's happened in this area, as in a lot of other areas, agriculture and especially here in Napa Valley,

was once considered ... clearly an asset to the community. And we have turned that corner. There is a significant portion of the population that does not feel that way anymore.

This shift in the public perception of agriculture appears to be growing throughout the coastal counties, where winegrape growers and the exurban population are competing for rural space.

Bill Friedland (2002) analyzes these conflicts and suggests this is another stage in the separation of agriculture from rurality. Forty years ago one could speak about the coastal counties and justly claim that they were rural. Changes in the nature of the US economy and transportation have turned portions of all these counties into "exurbia," regions populated by wealthy individuals who have fled the social problems of urban California. They bring with them acute environmental values, and the expectation that they will be able to live in "natural" beauty, without being exposed to pollution, agricultural or otherwise. This is particularly true in the coastal counties (see Fig. 3).

In addition to vineyard expansion, agricultural practices came under fire. Criticism of practices has been used as a buttressing argument against vineyard expansion specifically and the winegrape industry in general. Established vineyard owners and managers are understandably reluctant to question expansion by their fellow growers, but they have felt wronged by complaints about their vineyard practices, and are motivated to disprove critics. Grower John Clendenen of Sonoma County said:

Traditionally the farmer had the full say over what happened on his land, and that picture's changing really fast. And so it was very important to us to present a present a positive light on what we did. We were perceived as the "green desert," and then there were particular hot points that we've started to be attacked, viciously attacked on, usually sprays, methyl bromide use, certain pesticide use.

At the same time, winegrape growers recognized that consumers have higher expectations of their crop than others. Clendenen said:

...a lot of what we sell in wine grapes is perception. You know, it isn't all our crop goes in, sits in a silo somewhere, and it's sold through Cargill or something like that (*laughter*). A lot of it is perception, so beyond selling just an end product, wine, people want to feel the whole environment in which the wine is growing. And that's a perception that they get in a glass. So, we end up needing to be more perceived as environmentally friendly, consumer friendly from the start.

Growers throughout the coastal regions realized that environmental criticism threatened the future of their industry, and that collective action was necessary to address a crisis in public perception. The geographic

²These five are: Robert Mondavi Winery, Beringer-Blass, Diageo, E & J Gallo, and Fetzer.

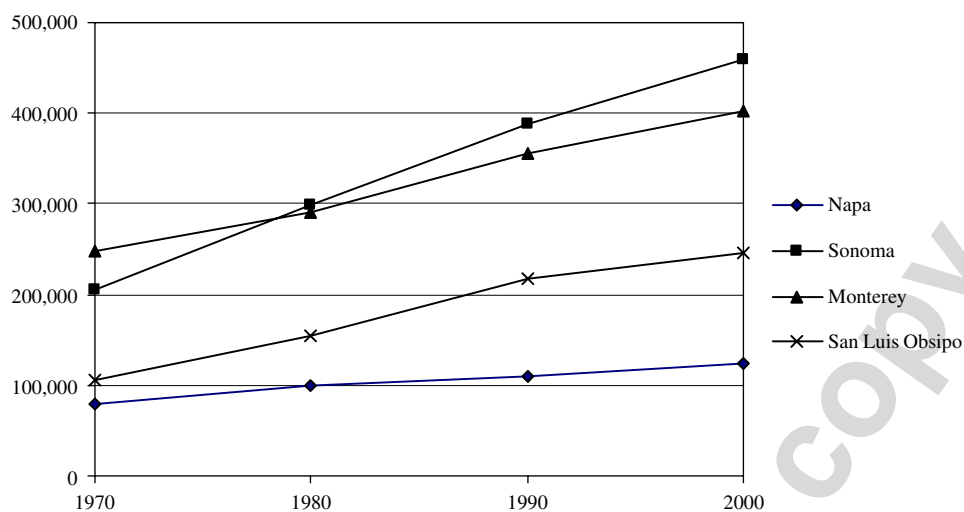


Fig. 3. Population of selected coastal counties producing winegrapes.

branding of wines offered the opportunity to enhance their income through quality premiums, but carried with it the danger of associating their region or vineyard with environmentally harmful practices. Industry leaders recognized that the winegrape industry as a whole was facing this crisis, and that they could best address it through collective action.

5. Agroecological partnerships and the message of sustainability

California winegrape growers in local networks organized agroecological partnerships to educate their fellow growers, neighbors, and environmental regulators about sustainable farming practices, drawing on the same network of social relations they did for regional AVA-based initiatives to improve wine quality. They grafted “sustainability” initiatives onto their existing quality improvement efforts using the same cooperative strategies, and over time, they began to recognize that the vulnerabilities associated with geographic branding of their wines could be converted into a marketing advantage.

Winegrape partnerships are a subset of the California agroecological partnership phenomenon. Between 1993 and 2003, 32 partnerships were created in 16 California commodities for crop-specific knowledge (Warner, *in press*). All partnerships promote practices to improve the quality of farm management through the application of improved knowledge of farming systems. They try to help the growers perceive, understand, and manipulate ecological relationships between on-farm organisms so as to make better decisions, and to use the least environmentally disruptive materials, preferably other biological organisms such as cover crops and beneficial insects. These initiatives are agroecological because they assume integrated pest management (IPM) and seek to ecologically optimize all components of farming systems, thus accruing synergistic benefits (Altieri, 2002). In practical terms, this means

learning how to better monitor pests, tolerate sub-economic damage levels of pest pressure, use less ecologically disruptive pesticides, more precisely measure fertilizer inputs and irrigation, and attend more closely to soil fertility. They frequently use agroecological knowledge from organic farming systems, but only a few growers pursue organic certification, for reasons discussed below. The agroecological partnership model is the leading vehicle for extending sustainable farming practices in California (Warner, 2006).

Winegrape growers have organized six partnerships, the plurality in California. This semi-privatized model of extension has particular appeal to the winegrape industry for several reasons.³ First, winegrape growers have a history of cooperative relations that have benefited them, more so than growers of any other crop. Second, state officials have slashed budgets to public extension services at the same time as the second pulse of vineyard expansion in the state, so winegrape growers realized that they would have to undertake extension activities formerly led by state institutions. Third, growers discovered that some of the farming practices that produced superior winegrapes also reduced some environmentally harmful practices. For example, careful reductions in irrigation, combined with vine canopy management, can improve winegrape quality and reduce resource use. Conversely, during the 1990s, several wineries discovered that certain pesticides compromised wine flavor, and prohibited their use through contracts. Winegrape growers recognized the value of using cultural practices so as to avoid compromising quality. The same outreach strategies that attracted many growers to improve regional quality and enhance winegrape price also helped them to recognize the value of adopting more sustainable practices.

³In the U.S., extension, or the practical field education of farmers, is conducted under the auspices of public universities. For a description of this process, see Warner (2006, and *in press*).

Collectively, winegrape growers have suffered more criticism from neighbors than growers of any other crop. More than in the partnerships of other crops, participating growers have used partnership activities to enroll their fellow growers in sustainable farming practices, and to reach out to non-farming neighbors about their efforts to be good environmental citizens. Winegrape growers do not represent their participation in agroecological partnerships as a marketing tool, but rather as an effort to quell the environmental criticism of vineyards. Nonetheless, growers and their organizations present the objective criteria of sustainability developed by partnerships to substantiate their claims, coupled with assertions about wine quality.

The first three winegrape agroecological partnerships formally began in the early-1990s in the Lodi, Napa, and Central Coast regions, building on a pre-existing local quality improvement networks. Robert Mondavi Winery launched a wine quality improvement effort on the Central Coast in the early 1990s, and vineyard managers there saw that enhancing environmentally responsible practices and demonstrating them to other growers and to the public was going to be increasingly important. As one Central Coast grower said:

I think I'm a good environmental citizen. Nobody's gonna know that unless I go out and tell them. And I need to tell them in a way that's irrefutable... (this partnership) has the potential of ... presenting a credible story and being able to back it up with good information.

In 1995, growers and vineyard managers started the Napa Sustainable Winegrowing Group, an informal association to address these issues. They have conducted dozens of workshops and created an IPM guide with region-specific information.

Environmental controversies in Sonoma County provoked an existing growers group to address the sustainability of their practices. Nick Frey, the executive director of Sonoma County Grape Growers Association said:

I have a hunch that people realized that there were some issues out there...we could probably do some things better, and two, we were going to be under closer scrutiny, but I would guess that they underestimated...the scrutiny and the timing of it, by like an order of magnitude, because in the fall of '99, it just exploded in the papers, this terrible problem with the vineyards, and we were problems for every kind of issue you could imagine, pesticides just being one of them.

His organization launched the IPM committee in 2000 to conduct outreach to local growers. This was re-named the sustainable practices committee in 2002.

All four of these local groups formalized the knowledge of more sustainable practices and quality enhancement

through creating guides, workbooks or self-assessment systems. The Lodi partnership's workbook in particular caught the attention of the statewide California Association of Winegrape Growers, and the major winery trade group, the Wine Institute. These two organizations had participated in a project titled "Wine Vision" to plan for the future of the winegrape and winery industries. They recognized that the Australian wine industry was poised to capture the low-end market, and that controversies on California's agricultural/exurbia interface were certain to continue.

In 2001, the two organizations launched the Sustainable Winegrowing Practices (SWP) Program, a statewide partnership to conduct outreach and self-assessment. The program's concept of sustainability is drawn from the "three pillars" of sustainability promoted by United Nations conferences: environmentally sound, economically feasible, and socially equitable (Dlott, 2004). The next year, the partnership released the Code of Sustainable Winegrowing Practices (henceforth "the code;" (California Association of Winegrape Growers and The Wine Institute, 2003), the most sophisticated and specific analytical tool and outreach document about sustainable agriculture in the US. The outreach to growers about the code was the most intensive grower-initiated extension effort about sustainable agriculture in the US. Their 2004 report was the first time an entire sector measured the level of sustainable practices among its members and publicly reported the results (Dlott, 2004).

The code consists of 221 criteria organized into 13 chapters, including farming and winery activities, but also personnel management and outreach to neighbors on issues like land use and housing. Chapters address viticulture, soil management, vineyard water management, pest management, wine quality, ecosystem management, energy efficiency, winery water conservation and quality, environmentally preferred purchasing, human resources and neighbors and community. Between 2002 and 2004, over 1000 winegrape growers and winery managers participated in half-day workshops, reflecting 25% and 50% of the state total of these actors; aggregate results from these self-assessments are reported (Dlott, 2004). Its sponsors intend the code to validate the notion of self-regulation. If they can hold their members voluntarily to higher standards than other agricultural sectors, their industries are likely to avoid regulatory action. The code is intended to further distinguish California wines on environmental grounds, and to position the industry for an eco-label. Industry leaders assert that partnerships and the code have been successful because winegrape growers want to project a positive image of their practices to neighbors and regulators, and that adding value to their product with quality claims derived from these efforts can only follow, not drive, these processes.

This initiative seeks to make positive consumer and neighbor perception a virtue out of necessity. Karen Ross,

the president of the California Association of Winegrape Growers, said:

The Sustainable Winegrowing Practices program is an important element of the California wine story—by documenting our practices and creating action plans for improvement we will be more competitive in the global market place. Just as importantly, it will make a difference in the court of public opinion that drives public policy on the land, water and other natural resources decisions critical to our future (Dlott, 2004).

Participants see partnerships as providing objective, scientifically grounded, and transparent information about the sustainability initiatives within the California winegrape industry. In the face of increased criticism by non-farming neighbors, they will document and publicize their efforts to be good environmental citizens.

But growers and wineries use partnership activities as an “offensive” strategy as well: marketing wines as an environmentally friendly product to enhance consumer perception of its quality. A vineyard manager for Robert Mondavi Winery said:

It sort of gets back to this: the personality of certain properties... winds up being perceived in that bottle of wine with your name on it... if that story of sustainability gets sold along with it, then I think it, that tourist leaves with the perception that... it's a natural beverage, or they've been told that it's healthy or that it's a good product, and, “by the way it's grown in a sustainable fashion.” Then I think you have a linkage that can be sustaining. It can be self perpetuating, for the health of our industry.

Participants recognize the value the winegrape and winery industries cooperating to devise a compelling message to sell geographically branded wines, and how they are attempting to convert environmental criticism into an opportunity to market quality. Numerous wineries in the coastal counties relate the “story of sustainability” to their visitors, and some wines make reference to environmental stewardship issues, although there is no formal program to coordinate these claims.

Leading winegrape growers in these partnerships prefer to use the term sustainability over organic or organic certification. Even though a substantial number of vineyards in the north coastal region practice organic farming and have sought organic certification, few use this in their marketing. Organic wines during the 1970s and 1980s were of such inferior quality that many consumers remember them with distaste. Also, the US Department of Agriculture National Organic Program disallowed sulfites, a preservative critical to ensuring quality aging. These growers view the code's definition of sustainability as superior to organic. They observe that some approved organic pesticides may in fact be ecologically problematic, and that some organic fertilizers (e.g., rock phosphate, guano, fishmeal) may be “less sustainable” than nitrate

fertilizers. The code's sustainability framework allows the winegrape and wine industry a discourse to represent themselves in a favorable light to environmental regulators, communities concerned about agriculture's environmental impact, and the wine consuming public. Sustainability offers the winegrape industry more discursive power than organic certification.

The next stage in these efforts is the creation of a formal eco-label. The California winegrape and winery industry has discussed the potential of using eco-labels since the beginning of the agroecological partnership initiatives (Central Coast Vineyard Team, 2000). Although wineries recognize consumer interest and potential economic benefits from an eco-label, they have been reluctant to pursue a formal certification. Chief concerns are the increased costs of farming and winery operations (identity preservation), and the difficulties of relating complex and contingent farming practices to consumers (Ohmart and Chandler, 1998). The recognition that other winegrape regions—in the US and other countries—are creating eco-labels has prompted Lodi winegrape growers to launch its own eco-label in 2006, “Lodi Rules.”

6. Conclusion

Some producers and consumers share an interest in enhancing food quality and advancing the goals of sustainability, even though these terms are contested, socially constructed, and subject to commodification. California winegrape growers, wineries, and their organizations have responded to public criticism about the expansion of vineyards and agricultural pollution by creating sophisticated networks to define, extend, and publicize sustainable farming practices. The California wine industry has concurrently benefited from continued growth in premium wines, and has begun to link product quality with sustainable farming as a quality attribute. In both cases, actors blend objective, measurable factors (e.g., agrochemical and water use reduction, acids and flavor content) with more subjective characteristics (environmental stewardship and “the California wine story”). Growers and winery managers perceive social, economic, and regulatory advantages to representing their industry with these subjective characteristics, supported by their initiatives to document improved viticultural and enological practices.

These initiatives represent an example of practice leading theory. The rural studies literature has heretofore conceptualized quality and sustainability as discrete attributes within the agrofood sector. This paper has argued for the benefit of linking product quality and environmental quality, achieved through “sustainable,” agroecological farming practices. Articulating a broader matrix of quality (and its contradictions) with differentiated consumer desire for quality offers a fresh perspective on rural development. The chronic but increasing tensions around agricultural pollution regulation should be incorporated into

understanding the role of quality in the dynamics of the agrofood system. A broader array of socio-ecological relationships in rural landscapes can be more fully considered in analyses of quality because it is a term sufficiently plastic as to be used by producers, marketers and consumers to enroll each other in mutually beneficial projects. The notion of quality can articulate these interests. Specific conditions of production may be important to definitions of quality, but this case study has nothing to do with relocalization or local food networks. In many cases, existing producers seek to enhance farmgate income and avoid environmental regulatory conflicts; marketers seek increased sales and improved profit by creating a better market niche; some (increasingly affluent) consumers increasingly seek enhanced experience through consumption of a quality product.

Geographic branding and quality marketing of foodstuffs carry with them the potential to enhance income to producers, but they also expose the specific circumstances of production to criticism on environmental grounds. The California winegrape and winery industries have captured tremendous profits with geographic branding by appealing to emerging consumer appetite for quality products, and their associated social status. This sector of the agrofood system is now coping with the vulnerabilities associated with farming in places charged with environmental conflict by presenting themselves as a paragon of sustainability. Agroecological partnerships mark a significant investment on the part of the winegrape industry in reaching out to member growers about agroecological practices.

This paper suggests that future rural research may find it fruitful to interrogate social dynamics internal and external to other types of designated agricultural regions, such as PDOs and PGIs. A thorough analysis of the economic benefits associated with geographic branding is needed. How important are the economic benefits of these geographic brandings to producers, relative to other cultural factors, such as regional identity preservation? How do the social networks of farmers within these regions respond to external pressures, such as the market vulnerabilities associated potential environmental problems, or the threat of regulatory action? Another potential line of inquiry would be comparative analysis between successful and unsuccessful efforts to organize geographic branding initiatives.

Many actors in the California winegrape industry are working to define sustainability, chiefly meaning environmental protection, as integral to geographic branding. A few leading actors are trying to present a broader definition of sustainability that includes the well-being of their neighbors, farmworkers, and rural communities. They have articulated a vision of sustainability as comprehensive as any in the private sector, incorporating social equity as well as ecological and economic factors. They are enrolling the public in this by “telling the story of sustainability” through outreach to local community members (including

critics), positioning themselves in negotiations with environmental regulators, and marketing their wine as environmentally friendly. Future research should investigate the role of eco-label content in shaping consumer perceptions of quality.

These partnerships are decidedly local in their attention to farming practices and environmental resource conservation, but they are global in their marketing ambitions. They are embedded in local relations of production, but their products flow through conventional distribution to the world market. Participating actors have fused quality of wine with quality of environmental conditions of production to convey a message in each bottle. Additional research on these topics should attend to the quality and sustainability claims being made on labels, with a critical eye toward the environmental performance of participating producers. This research agenda would benefit from a comparative analysis of other commodity sectors in which there have been quality and sustainability initiatives, such as coffee.

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