

Chapter 17

Wine Industry in Chile

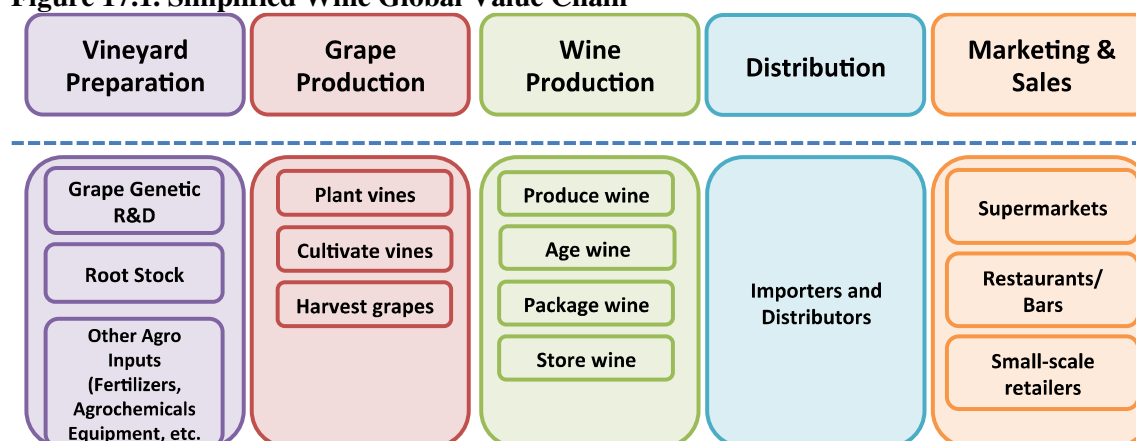
Karina Fernandez-Stark and Penny Bamber¹

17.1. Industry Overview

Over the past 20 years, the wine industry has undergone significant changes that have fundamentally altered its competitive landscape. The ‘democratization’ of wine associated with the rise of growing demand from a broader consumer-base, combined with the rise of new producers and a concentration of sales through supermarkets has shifted the focus from a producer-driven industry focused on differentiated supply to one led by demand. While natural endowments such as climate and *terroir*² remain the most important factors for success, the ability to innovate in production, consistently achieve economies of scale and align research and development strategies with marketing goals have become essential drivers of competitiveness (Cusmano et al., 2010).

During this time, international trade of wine has grown in terms of total volumes and value and diversified into a number of new geographic markets. Total exports grew threefold from US\$10.2 billion in 1995 to US\$35 billion in 2013 (UNComtrade, 2015). The geographic composition of trade has also changed – both in terms of demand and supply. While “Old World” suppliers in Europe, including France, Italy and Spain previously dominated the industry with over 90% market share, today several “New World” producers, including Australia, Chile, New Zealand, South Africa and the United States have emerged as important exporters. Once driven by European demand, the industry is now characterized by strong markets in the Asia-Pacific region, particularly in China and South Korea (UNComtrade, 2015).

Figure 17.1. Simplified Wine Global Value Chain



Source: Authors

The evolution of Chile’s wine sector, which has been largely export-oriented since the 1990s,³ is illustrative of these changing dynamics in the global industry. Since 1995, the economy’s wine exports have grown by a factor of ten, from US\$182 million to US\$2 billion in 2013, simultaneously tripling

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² The combination of conditions of the soil, climate and topography.

³ The share of Chilean wines sold abroad increased from 7% in 1989 to 63% in 2002 (Visser, 2004).

its market share to reach 6%. Although primarily known for its “value for money” model, the per unit value has increased slowly but steadily over this time, particularly in the bottled wine segment (UNComtrade, 2015). With over 117 thousand hectares under production and almost 200 exporting wineries (Farinelli, 2012), the industry expects to increase its bottled wine sales 25% in value by 2020 (Todovinos.cl, 2014). This growth has been driven by several factors including technological and organizational changes and product standardization in the industry, focusing on more easily identifiable varieties and innovating in marketing (Cusmano et al., 2010).

17.2. Background information on the Firm⁴

The firm represented in this case is a traditional, family-owned Chilean wine company with over 60 years of experience in the sector. The firm exports primarily bottled and boxed wine and a very small quantity wine in bulk that is bottled or packaged in the destination market. The firm exports a range of wines in the varietal, premium, super premium and ultra premium market segments and is primarily focused on the small group of grape varieties that Chile is well known for – Cabernet Sauvignon, Carmenere, Merlot, Chardonnay and Sauvignon Blanc. Its wines have been recognized for their high quality with awards from international competitions and, today, the winery is trying to position itself in the high-end market and will soon launch an icon wine.

With operations in both Chile and Argentina, the winery has its own grape production and winemaking operations. The vineyard has several hundred hectares under vines and the grapes produced in these in-house operations are typically used for the firm’s finer wines, in which the vineyard requires greater control over quality. For its lower priced wines or varieties, the vineyard tends to source from grape outgrowers.

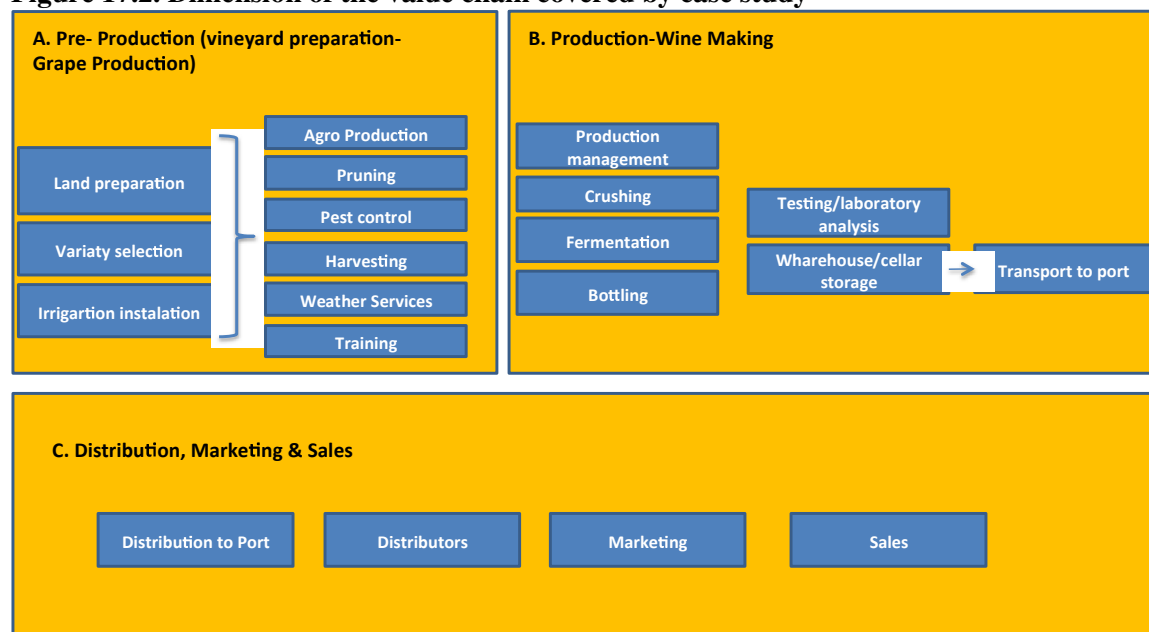
The firm’s operations over the past two decades have been transformed by two key principles – modernization and sustainability. New technologies were incorporated into the cellar to optimize quality control and production efficiencies; the firm obtained a range of certifications required for key global markets, including ISO 9000, 14000, Hazardous Analysis and Critical Control Points (HACCP) and British Retail Consortium (BRC) certifications, while also adopting a code of conduct for labor operations; at the same time, a range of environmental measures such as water recycling and use of lighter bottles were adopted to help reduce the firm’s carbon footprint. These efforts have supported strong growth. Between 2003 and 2013, sales more than tripled by volume and value, and the firm expanded its geographic reach into a number of new markets, particularly in Asia, including China, Japan and Singapore.

17.3. Description of the Value Chain

This case study will focus on the firm’s Chilean operations, which accounts for over 90% of the firm’s exports. For the purposes of this case study, five main stages of the wine global value chain are discussed: vineyard preparation, and grape production (Pre-Production activities); wine making (Production activities); and distribution, marketing, and sales.

⁴ All information about the firm in this case study is from its corporate website as well as from the interview.

Figure 17.2. Dimension of the value chain covered by case study



Source: Authors

Pre-production: Vineyard Preparation and Grape Production (Viticulture)

Vineyard Preparation. During this stage of the chain, the variety to be planted is carefully selected based on the *terroir*. This is the natural environment comprised of the soil, climate and topography. In this stage, many tests are performed analyzing the most suitable varieties for wine production. In addition, a number of inputs are purchased to establish the vineyard including poles, wires, and rootstock amongst others. This requires significant investment, with no returns for approximately three years until the vines become productive.

Grape Production. In this stage of the chain the grapes are cultivated and harvested. Some of the key activities are canopy management, pruning, irrigation control, spraying and harvesting. Over the past few years, there has been an increase in the mechanization of many of these activities. This stage is also characterized by strict quality control in order to obtain the best grape possible to prepare the desired wine. The grape production of this winery follows two models: in the first model, the wine maker owns the grape production, while, in the second scheme, the wine maker sources grapes or grape juice from independent outgrowers. However, in the outgrower system, the wine maker is also involved in the cultivation process to control the grape quality.

Production: Wine-Making (Viniculture)

The wine production stage is comprised of a number of processes. This process starts with the crushing of the grapes, followed by fermentation in which the temperature is controlled and all chemical reactions are completed. After that, the grapes are pressed to extract the juice, which is then blended to create the desired wine type. Finally the wine is bottled, or stored before bottling. During this stage of the value chain, the different wine blends are created. Critical to this process is the fermentation stage in which the wine is kept in stainless steel tanks. Later, the wine is stored (in steel, ceramic or oak containers) until there is a purchase order, after which bottling takes place. However, premium wines are commonly stored and aged in bottles.

Post-production: Distribution and Marketing & Sales

Distribution is a key segment for the wine industry, although the distribution models differ widely by market. The winery studied follows three distribution schemes, all of which include intermediaries, with no direct sales to the consumer. The first model includes an importer that sells the wine to distributors who in turn sell the wine to the final outlets. The second model is very similar to the first one; the only difference is that the distributor is a monopoly in the economy and also owns retail outlets. For example in Norway, the government owns “Vinmonopolet”, a state-owned enterprise that sells beverages with alcohol content higher than 4.75% (Vinmonopolet, 2015). This is the only retail outlet permitted to sell wine. The third model excludes the importer and the wine goes directly to distributors. Thus, distributors in leading export destinations largely control access to market and buy wines according to the final consumer preferences.

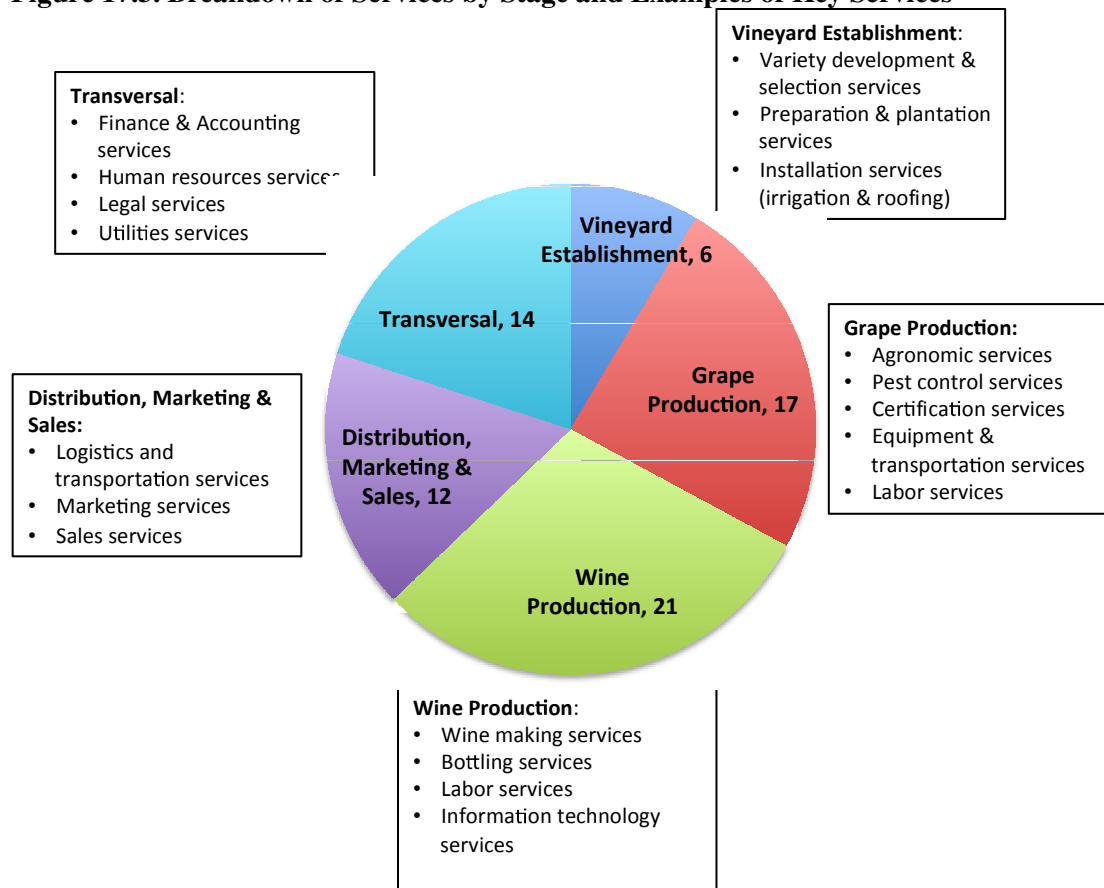
With the influx of new entrants into the global wine industry and a broad expansion of the consumer base, marketing has become an essential part of firm strategies. Amongst the low-to-mid end of the market, there has been a move away from a traditional supplier driven approach to labeling and branding, towards one focused on a demand driven approach (Cusmano et al., 2010), with emphasis on occasions, or controversial labels to attract younger consumers attention. The cost of building these new brands has led firms to focus on a smaller number of brands, under which they market a variety of different grapes and blends (Ponte & Ewert, 2009).⁵ Nowadays marketing activities, especially promotions are critical to sell wines, especially high volume/low value wines. Other marketing activities popular in the industry includes tasting in the point of sales, training to sommeliers, and special discounts.

17.4. Services along the Value Chain

A total of 70 services can be identified in this value chain; 33 of which are more directly related to the wine production phase while 23 relate to the agriculture phase; an additional 14 services are transversal operations which support all stages of the value chain. These can be categorized according to the various stages within the chain (see Figure 17.3): i) vineyard preparation, ii) services during grape production, iii) services during winemaking, iv) distribution and marketing services, and v) back-office services.

⁵ In some cases, marketers simply own the brand and are not engaged in any way in the production operations.

Figure 17.3. Breakdown of Services by Stage and Examples of Key Services



Source: Authors

Pre-production: Vineyard Preparation and Grape Production (Viticulture)

Pre-production services include activities in the vineyard preparation and grape production. These services are carried out by in-house personnel as well as third party providers.

Vineyard preparation is mainly outsourced to experts with respective specialized skills in variety development, irrigation systems, soil testing and vineyard construction. R&D in variety development is typically carried out by local and international research institutions with expertise in grape production and performance. The winery outsources soil studies, soil preparation, installation of drip irrigation, installation of electrical circuits, well construction, and recruitment of external personnel to plant of new vines. In addition, the winery hires external technical experts to provide critical information regarding the varieties to be planted and the cultivation technique to be followed.

In **grape production operations**, the company generally performs key services in-house. Its production team includes one internal agronomist and three technicians that manage both internal and outgrower grape production. However, there are a number of services that are supplemented by external personnel including pesticide application in which the firm hires specialized service providers that apply these chemicals by land and air.⁶ During peak periods, the winery also supplements certain activities with external companies to perform services such as trimming and harvesting. The training of personnel is handled through a combination of internal on-the-job training and specialized external courses. In addition, the firm also trains outgrowers to ensure the quality of the grapes to be purchased, especially

⁶ This external services represents around 25% of the total pesticide application in their plantations.

in the most expensive type of grapes. The winery usually has a dual system for equipment handling at this stage of the chain; it owns basic equipment and outsources repairs and maintenance. The firms also contracts equipment and operators during peak periods. For example, it contracts mechanized harvesting services as well as transportation services to move the grapes to the winery.⁷ Regarding IT services, software development is provided by specialized firms that create customized programs for precision agriculture, including climate, soil and disease monitoring and production tracking.

Production: Wine-Making (Viniculture)

While many services in this stage of the value chain can be outsourced, the firm generally undertakes these activities in-house. These services include processing grapes and transforming them into wine. This process is handled by an internal team of employees including an operations manager supported by oenologists, technicians and workers. The company handles the entire process from grinding, fermentation, pressing, storage and bottling. The firm also stores its wine in tanks and barrels. In addition, the company bottles its wine, and offers bottling services to other wineries. Testing services are typically outsourced to experts, especially laboratories in local universities. The firm also works with these external laboratories to obtain certification of origin of denomination that is granted by the National Agriculture and Livestock Agency (SAG). The company usually hires experts the first time it applies for a new market certification to make sure they follow each step correctly. Once it obtains the certification, the renewal process is handled internally. It is also important to note that at certain times, such as the creation of new wines, the company may hire an external oenologist. Nonetheless, an internal oenologist works in the winery all year round. In addition, the firm has installed an IT system developed by an expert company, but maintains an internal IT team to manage production and inventory.

Post-production: Distribution and Marketing & Sales

In this stage of the value chain, **distribution** is carried out by external actors including importers and distributors that facilitate entry in destinations markets. Transportation of the wine from the winery to the port is outsourced, as is international freight - the majority of which is by sea. This is the main transportation cost incurred by the firm since the wine is sold Free on Board (FOB) and the importer is in charge of all international transportation costs.

Finally, the **marketing and sales** operations are handled in-house. The company has an internal marketing team that prepares an annual marketing plan. These activities include: penetration of new markets, promotions, training of sommeliers, and participation in trade fairs. In addition, specific marketing initiatives are undertaken to ensure participation in exclusive wine rankings, such as Wine Spectator. At this stage of the chain, the firm outsources brand design and other graphics to position the company in the domestic and worldwide market. At the same time, the winery hires an external agency to develop a media marketing campaign in Chile. Sales activities are managed in-house and they provide sales incentives to the salespersons hired by the distributors.

Back office Services and workers transversal services

The back office services are transversal to the chain activities and they support all firm operations. These activities include finance and accounting, human resources, IT, legal services, and security. The company carries out some of these services in-house, including, finance and accounting and human resources, occasionally drawing on the support of external advisors. The remaining activities, including legal services, security and software development are outsourced to specialized firms.

⁷ Harvesting and transportation services are not bundled.

Outsourcing, Bundling and Other Aspects of Services Supply

Among the 70 different services identified in this value chain, our analysis estimates 20 are supplied in house, 21 are partially outsourced, while 29 are fully outsourced (See Table 17.1). This shows a general balance between in-house and outsourced provision of services; however, in the analysis of services provision by segment of the value chain certain trends can be observed. For example, the winery supplies more services in-house in the later stages of the chain, while it follows a more aggressive outsourcing strategy at the beginning of the chain.

Table 17.1. Breakdown of Services Provision, by Value Chain Stage

Segments of Value Chain	In-House	Partially Outsourced	Fully Outsourced
Vineyard Preparation	1	0	5
Grape Production	0	10	7
Wine making	6	7	8
Distribution, Marketing & Sales	7	1	4
Transversal Services	6	3	5
TOTAL	20	21	29

Source: Authors based on interviews

The firm's provision of services is concentrated in its core competencies, Wine Production and Distribution, Marketing & Sales. Those segments of the chain are crucial for its business, especially the wine making stage. In this stage, all the critical activities such as crushing, fermentation, blending, bottling and storage are performed in-house. The company outsources other activities to concentrate on what they consider their core strengths. In addition, the Chilean wine sector has developed considerably over the past decade which has allowed the emergence of a critical mass of specialized services providers. With almost 200 vineyards, and US\$2 billion in exports, these providers are able to provide specific services –such as harvesting services, laboratory testing, and bottling services -- to a range of clients that demand the same services.

The establishment of the vineyard is principally fully outsourced since this is a one-time operation. In the case of the grape production, the company has an internal staff that is usually supplemented by external companies. In this case, the winery maximizes its resources by outsourcing services during peak times instead of maintaining idle staff during slower periods of the year. The company is also moving toward outsourcing transversal services as these are not core firm activities.

The main reasons for outsourcing services are: (1) cost efficiencies and economies of scales (eg. hiring agricultural services during peak times); (2) services provision in a collective manner (eg. meteorological services provided by Wines of Chile); (3) access to specialized equipment and skills (eg. renting the harvesting machine and operator to collect the grapes); (4) government support services (eg. certification for origin denomination); (5) network economies, such as recruitment services; and 6) lack of feasibility in supplying services in-house, such as utilities services.

17.5. Policies Affecting the Value Chain

Since the 1990s, the Chilean wine industry has been supported by a range of industrial policy measures, with specific emphasis on exports. These policies have encouraged industry development in different areas including facilitating trade, incentivizing employee training and research and development and

international promotion among others (see Table A.6). This set of policies has had a significant impact due to very strong industry collaboration in which all stakeholders in the sector are closely aligned and work together on a number of core issues. Some of the most important stakeholders include government agencies such as CORFO, National Agriculture and Livestock Agency (SAG) and ProChile, Chile's export promotion agency; the industry association, Wines of Chile, and local research universities. These policies have supported strong growth in the industry and helped to reduce costs in production and export; a key challenge for policy makers and firms alike that remains today is to reposition Chile has a higher quality wine in the global market.

Supportive export-oriented policies

Chile's wine exports have benefited to a great degree from the consistent export-oriented trade policies that have been implemented over the past few decades. By 2013, Chile had 22 free trade agreements with 60 economies, providing access to 60% of the world's consumers (Murray, 2013). ProChile and DIRECOM (the General Directorate of International Economic Relations) have been vital in terms of leading negotiations in reduction of quotas and tariffs. By 2015, import tariffs for Chilean wine to China had been reduced to zero, compared to 14% from other economies with Most Favored Nation status (ProChile, 2011). ProChile is a key actor in identifying new international clients, maintaining and sharing a database of distributors and retailers in all major markets. In Asia, specifically, they financed the establishment of an international office for Wines of Chile, helping to position the Chilean wines in this important market. China is now the fourth-largest importer of Chilean wine. SAG officials constantly visit wineries to control plagues and certify that the pesticide applications are done in time. In addition, SAG periodically visits wineries to quantify the wine stock to support the credibility of the certification of origin initiatives.

Efficient logistics: competitive transportation, modern ports, and streamlined customs operations

Despite considerable distance from its major markets, logistics costs are lower in Chile than in many competing economies. High import and export volumes and a liberalized transportation sector have fostered competition amongst logistics providers, which have helped to reduce costs. The modernization of the Chilean ports following their privatization, which began in the late 1990s, has significantly contributed to the economy's capacity to rapidly export large quantities of products. There are numerous ports along the economy's coast, reducing costs and distances for land transportation. Online processing with the implementation of the single-window system has improved the efficiency of customs clearance, reducing unnecessary delays at the ports. This has helped to circumnavigate issues such as strikes of customs staff at the ports; the firm is able to complete all of the customs forms online and deliver the wine cases to the international transport company. This helps to prevent disruptions in the on-time delivery of wine to foreign distributors.

Human capital development & labor regulations⁸

Efforts in terms of human capital development and labor regulation have been key in facilitating growth. This is particularly important in the pre-production stages, because of the shortage of agricultural workers. Training efforts have thus been focused on driving productivity, led on one hand by tax

⁸ For a discussion of how workforce development initiatives have contributed to the upgrading of the fruit industry in Chile, see Fernandez-Stark, K et al. (2010). Workforce Development in the Fruit and Vegetable Global Value Chain. In G. Gereffi, K. Fernandez-Stark & P. Psilos (Eds.), *Skills for Upgrading: Workforce Development and Global Value Chains in Developing Countries*. Durham: Center on Globalization Governance & Competitiveness and RTI International.

incentives through the National Training and Employment Agency (SENCE), and on the other by the ChileValora program – a joint initiative between the Ministries of Economy, Education, Labor and Social Security and the private sector. SENCE provisions incentivizes firms to individually and collectively develop training programs specially to meet the needs of the industry. This company uses all these benefits up to the limit amount established by the government. Inclusively, they have developed their own curricula about efficient operations in the winery. The ChileValora program is a competencies-based certification system launched at the end of the 1990s that certifies every job profile required for the industry (Fernandez-Stark et al., 2011). In addition to increased productivity, flexible labor regulation, which permits subcontracting of labor, has allowed the industry to maintain its competitiveness by relying on temporary contracts to meet peak periods of demand during the year.

Box 17.1. Chile National Labor Skills Certification System

This program was created in 1998 by Fundación Chile. This system aims to provide a framework for the recognition of competencies, regardless of how these were acquired with the goal to improve industry competitiveness. The program has involved both public and private stakeholders from 15 different industries. In these 15 industries, more than 500 occupational standards have been established and 10,000 workers have been certified annually. These skills standards have been transferred to vocational training institutions to refine their curricula. At the same time, the workers that have not passed the evaluation are offered training courses to fill the skills gaps and later receive the certification of skills diploma.

This system has identified the skill profiles required for the majority of jobs performed in the wine industry. The certification of skills of the wine sector workers started in 2010. The industry association, Wines of Chile, and the Chilean government has been working for more than 15 years to develop this program. To date, more than 4,500 workers have certified their skills in the wine sector.

The main advantages of this system is to facilitate the portability of skills, decrease uncertainty in the hiring process making it more efficient, grant credibility of the workers abilities and most importantly create a proud sentiment among workers certified helping to establish a culture of lifelong learning and development. While this system is still in a nascent stage, in the medium term it will be expanded to include the entire agro sector.

Source: (Araneda, 2010; Chilealimentos, 2010; ChileValora, 2013; Kis & Field, 2009; López, 2009).

R&D and variety development

Several competitive grant funds are available to carry out research for the wine sector, many of which are financed through the *Fondo de Inversión para la Competitividad* (InnovaChile). Both local and foreign universities (see Box 17.2) play a central role in applied research through the provision of services to the industry. In 2012, a consortium for wine R&D was created by the Chilean Government through InnovaChile and the industry association, Wines of Chile. The total cost of the project is approximately US\$30 million for a ten-year period, with each organization providing 50% of the financing. The goal is to strengthen collaboration with local universities to generate useful knowledge for the wine sector (Vinos de Chile, 2015).

Box 17.2. Chile and UC Davis California Partnership

Chile and University of California – Davis (UC Davis) have collaborated for over 40 years. In the early days of this agreement, more than 50 Chileans went to the university to study agriculture. They were named the “Davis boys” and they revolutionized and supported the success of the Chilean export fruit industry.

In 2010, the original agreement was revitalized with the signature of two memorandi of understanding. The first focuses on training and R&D in the area of breeding and genetics for new grape crop varieties. Various Chilean institutions participate in this program including the National Association of Seed Producers, the Institute of Research on Agricultural and Livestock, University of Chile, Pontificia Catholic University of Chile (PUC), Pontificia Catholic University of Valparaiso, University of Talca and University Austral of Chile. The objective of the second agreement is the development of the wine industry through R&D, training and knowledge transfer in the latest technologies. The Chilean participants include Vinnova, a consortium enterprise formed through the partnership of Wines of Chile, PUC and the University of Concepción, with the support of Innova Chile.

In 2015, this partnership was reinforced with the opening of the UC Davis-Chile Life and Science Innovation Center in Santiago. With a US\$12 million initial budget, the Center is focused on R&D to support the agriculture industry including plant breeding, postharvest and climate-change technologies.

Source: (UCDavis, 2008, 2015)

Institutionalization

As mentioned earlier, strong industry institutionalization has helped the development of the sector. Wines of Chile, the industry association, representing 90% of all wine exports, has played a key role in the industry success. Members pay a quota proportional to their exports to support a range of programs and activities. Some of these initiatives include: meteorological stations along the economy to provide climate information, scientific studies that analyze the key topics for the sector, and determining areas of appellation of origin for the Chilean wine among many others. The organization works closely with both public and private sector actors to resolve issues affecting the industry. They usually are involved in joint programs with the government and local universities. This strong coordination and collaboration underlies the development of the industry. This industry association also works closely with ProChile, the Chilean government agency that promotes the export and services around the world. ProChile has a range of programs to support the Chilean wine exporters that range from training to funds for international promotion. A key challenge that the industry faces with respect to its global exports is improving the perception of the quality of its wine. Chile’s success as a good value for money wine producer has made it very difficult for individual vineyards to position themselves internationally with higher priced, superior quality wines. As this is a collective problem, ProChile and Wines of Chile must take the lead in promoting an international campaign to reposition Chilean wine in higher value segments.

Appendix A

Services in the Wine Value Chain

Table A.1. Pre-Production: Vineyard Establishment Phase

	Service	Central Product Classification (CPC) Ver.2 Code	Supplied in-house	Outsourced to affiliated companies and reasons	Outsourced to third-party suppliers/ government and reasons	Bundled
1	Genetic development services	81140 - Research and experimental development services in agricultural sciences	No	No	Yes; comparative lack of expertise	
2	Variety Selection	81140 - Research and experimental development services in agricultural sciences	Yes; in-field testing	No	No	n/a
3	Land Preparation and plantation of rootstock	86119 - Other support services to crop production	No	No	Yes; efficiencies	n/a
4	Electric installation	54611 - Electrical wiring and fitting services	No	No	Yes; efficiencies	n/a
5	Construction of infrastructure (roofing, etc)	86119 - Other support services to crop production	No	No	Yes; efficiencies	n/a
6	Installation of irrigation equipment	54234 - General construction services of irrigation and flood control waterworks	No	No	Yes; efficiencies & specialized skills	n/a

Source: Compiled by Authors based on firm interview

Table A.2. Pre-Production: Grape Production (Viticulture)

	Service	Central Product Classification (CPC) Ver.2 Code	Supplied in-house	Outsourced to affiliated companies and reasons	Outsourced to third-party suppliers/ government and reasons	Bundled
7	Production management	83115 - Operations management consulting services	Yes	No	Yes; access to specialized knowledge	No
8	Disease and plague control	86119 - Other support services to crop production	Yes; application	No	Yes; efficiencies, specialized knowledge; internal capacity	n/a
9	Pruning of vines	86119 - Other support services to crop production	Yes; supervisory team & trainers	No	Yes; efficiencies labor-intensive for short periods	Bundled with labor sub-contracting
10	Equipment rental for harvesting	86119 - Other support services to crop production	No	No	Yes; efficiencies	Bundled with repair and maintenance
11	Harvesting services	86119 - Other support services to crop production	Yes	No	Yes; efficiencies, specialized knowledge; internal capacity	Bundled with labor sub-contracting

Services in Global Value Chains: Manufacturing-Related Services

12	Land transport of grapes to processing plants (Wineries)	65119 - Other road transport services of freight	No	No	Yes; efficiencies – economies of scale	
13	IT services production management	8313 - Information technology (IT) consulting and support services	Yes	No	Yes, for specific tasks	
14	Repair and maintenance of equipment	87156 - Maintenance and repair services of commercial and industrial machinery	Yes; for minimal fleet	No	Yes; for specific maintenance	
15	Recruitment of temporary/seasonal workers	8512 – Labour supply services	Yes	No	Yes; network efficiencies	
16	Transportation services for workers to and from orchards	64114 - Local special-purpose scheduled road transport services of passengers	No	No	Yes; economies of scale	
17	Training of temporary/seasonal workers	92919 - Other education and training services, n.e.c.	Yes	No	Yes; specialized skills	
18	Catering services for workers	63393 - Other contract food services	No	No	Yes	
19	Medical services	93121 - General medical services	No	No	Yes	
20	Social insurance for seasonal workers	91320 -Administrative services related to government employee pension schemes; old-age disability or survivors' benefit schemes, other than for government employees	Yes; for internal personnel (required by law)	No	Yes	Bundled with recruitment of workers
21	Post-Harvest Quality Control for all production	83441 - Composition and purity testing and analysis services	No	No	Yes; efficiency, specialized skills	
22	Weather analytical services for all growers	83430 - Weather forecasting and meteorological services	No	No	Yes	

23	Agronomic extension services for outgrowers	83115 - Operations management consulting services	Yes; firm provides this service to their outgrowers	No	Yes; specialized skills	
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Source: Compiled by Authors based on firm interview

Table A.3. Production. Wine-Making (Viniculture)

	Service	Central Product Classification (CPC) Ver.2 Code	Supplied in-house	Outsourced to affiliated companies and reasons	Outsourced to third-party suppliers/ government and reasons	Bundled
24	Production management	83115 - Operations management consulting services	Yes	No	No	
25	Architectural Services: Design and construction of packing plants	83213 - Architectural services for non-residential building projects	No	No	Yes; efficiency, specialized skills	Bundled with engineering services for plant construction
26	Engineering Services: Design and construction of packing plants	83310 - Engineering advisory services	No	No	Yes; efficiency specialized skills	Bundled with architectural services for plant construction
27	Wine makers	83115 - Operations management consulting services	Yes	No	Yes	
28	Crush grape services	88182 - Wine manufacturing services	Yes	No	No	
29	Fermentation. Barrel Storage	67220 - Bulk liquid or gas storage services	Yes	No	No	
30	Bottling Services	85400 - Packaging services	Yes	No	No	
31	Certification of Operations for Private Standards	83115 - Operations management consulting services	Yes; for recertification	No	Yes; efficiency specialized skills	n/a
32	Certification for Public Sanitary and Phytosanitary Standards	91122 - Public administrative services related to health care	No	No	Yes; government services	n/a

33	Warehousing services for final goods	67290 - Other storage and warehousing services	Yes	No	No	
34	Testing/ lab analysis	83441 - Composition and purity testing and analysis services	No	No	Yes; lack of expertise	
35	Vineyard and wine production software services: IT services for vineyard and inventory management	Class of 8313 - Information technology (IT) consulting and support services Class of 8314 - Information technology (IT) design and development services Class of 8316 - IT infrastructure and network management services	Yes	No	Yes; specialized services	
36	Training Services	92919 - Other education and training services, n.e.c.	Yes	No	Yes; specialized services	
37	Cleaning services of Operations	85330 - General cleaning services	Yes	No	No	
38	Repair and maintenance of equipment	87156 - Maintenance and repair services of commercial and industrial machinery	Yes	No	Yes	
39	Security guards for factory and warehouses	85250 - Guard services	No	No	Yes	
40	Government inspections on fire prevention, health hazards, environmental protection and other aspects.	91290 - Public administrative services related to other public order and safety affairs	No	No	Yes; government services	n/a
41	Recruitment of temporary/seasonal workers	8512 – Labour supply services	Yes; permanent workers recruited in-house	No	Yes; efficiency and network efficiencies	Bundled with social insurance for workers
42	Social insurance for workers	91320 -Administrative services related to government employee pension schemes; old-age disability or survivors' benefit schemes, other than for government employees	Yes; for internal personnel	No	Yes; subcontractors contribute individually	Bundled with labor subcontracting

Services in Global Value Chains: Manufacturing-Related Services

		91330 - Administrative services related to unemployment compensation benefit schemes	(required by law)			
43	Catering services for workers	63393 - Other contract food services	No	No	Yes; efficiency	n/a
44	Medical services	93121 - General medical services	No	No	Yes; efficiency	n/a

Source: Compiled by Authors based on firm interview

Table A.4. Distribution, Marketing and Sales

	Service	Central Product Classification (CPC) Ver.2 Code	Supplied in-house	Outsourced to affiliated companies and reasons	Outsourced to third-party suppliers/ government and reasons	Bundled
45	Land transport of wine to the port	65119 - Other road transport services of freight	No	No	Yes; efficiencies – economies of scale	
46	Customs-related services	85999 – Other support services n.e.c.	Yes	No	No	n/a
47	Importer	61221 - Wholesale trade services on a fee or contract basis, of fruit and vegetables	No	No	Yes; lack of expertise, market specific	n/a
48	Design of logo and design of packaging	83919 – Other specialty design services	No	No	Yes; efficiency, specialized skills	n/a
49	Marketing services	83114 - Marketing management consulting services	Yes	No	No	
50	Market Research	83700 - Market research and public opinion polling services	Yes	No	Yes; collective action	n/a
51	Market analysis and Intelligence	71591 - Financial consultancy services	Yes	No	No	
52	Market entry	91138 - Public administrative services related to general economic, commercial and labour affairs	No	No	Yes. Government services	
53	Sales services	61221 - Wholesale trade services on a fee or contract basis, of fruit and vegetables	Yes	No	No	n/a

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54	Retail trade services By store	621 – Non-specialized store retail trade services	Yes	No	No	
55	Retail services on a fee or contract bases	625 – Retail trade services on a fee or contract basis	Yes	No	No	
56	Training Services	92919 - Other education and training services, n.e.c.	Yes	No	No	

Source: Compiled by Authors based on firm interview

Table A.5. Back Office Services

	Service	Central Product Classification (CPC) Ver.2 Code	Supplied in-house	Outsourced to affiliated companies and reasons	Outsourced to third-party suppliers/ government and reasons	Bundled
57	Company registration and licensing services (obtaining permit to operate)	91138 – Public administrative services related to general economic, commercial and labour affairs	No	No	Yes, government services	n/a
58	Headquarter services	83118 – Head office services	Yes	No	No	n/a
59	Management services	83111 – Strategic management consulting services	Yes	No	No	n/a
60	Finance & Accounting	Group of 822 - Accounting, auditing and bookkeeping services	Yes	No	Yes; independent audit required by law	n/a
61	Insurance services	7131 – Life insurance and pension services 7132 – Accident and health insurance services 71334 – Other property insurance services 71335 – General liability insurance services	No	No	Yes, not possible to supply in-house	n/a
62	Corporate communications, marketing and public relationship	83121 - Public relations services	Yes	No	No	n/a
63	Legal services, including contract negotiations with foreign buyers	82120 - Legal advisory and representation services concerning other fields of law 82130 - Legal documentation and certification services	No	No	Yes; efficiency, specialized skills	n/a
64	Human resources management (Permanent staff)	Class of 8511 - Personnel search and referral services	Yes	No	No	

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65	Training services	92919 - Other education and training services, n.e.c.	Yes	No	Yes; specialized skills	n/a
66	Social insurance for staffs	91320 – Administrative services related to government employee pension schemes; old-age disability or survivors’ benefit schemes, other than for government employees 91330 – Administrative services related to unemployment compensation benefit schemes	Yes	No	No	n/a
67	Information technology services	Class of 8313 - Information technology (IT) consulting and support services Class of 8314 - Information technology (IT) design and development services Class of 8316 - IT infrastructure and network management services	Yes; internal IT department supports day to day operations	No	Yes; efficiency, specialized skills	n/a
68	Utilities: Electricity, gas, water and telecommunications services supply and waste removal	Class of 8631 - Support services to electricity transmission and distribution 86320 - Gas distribution services through mains (on a fee or contract basis) 86330 - Water distribution services through mains (on a fee or contract basis) 94239 - General waste collection services, other Group: 841 - Telephony and other telecommunications services	No	No	Yes; not possible to supply in-house	n/a
69	Security Services	85230 - Security systems services 85250 - Guard services	No	No	Yes; specialized skills	n/a

70	Cleaning Services	85330 - General cleaning services	Yes	No	No	n/a
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Source: Compiled by Authors based on firm interview

Table A.6. Policies Affecting Services in the Value Chain

Government and private policies/services	Authority(ies) in charge	Details	How the policy affects services in the value chain
Incentives for R&D (Tax incentives and Competitive Grant Funds)	CORFO (Economic Development Agency), CONICYT (National Commission for Scientific and Technological Research)	CORFO offers a series of grant and incentive benefits for the research and development of the wine sector. These instruments are designed to foster collaboration between domestic and international universities, public research institutions and the private sector.	It provides inputs into improved wine production.
Competitive Grant Funds for Exports in Agroforestry	PROCHILE (Export Promotion Agency)	The program provides market research and undertakes promotional activities to support the wine exports abroad. In addition, the program provides funding for commercial missions abroad, office rentals abroad for promotion, participation in international trade fairs, short-term training abroad amongst others.	It provides exporters with detailed information regarding potential export markets as well as promoting wines abroad in key international events. In addition, it offers financing for other marketing and sales services in the value chain.
Modernization of Customs Services and Single-Window System	Servicio Nacional de Aduanas (National Customs Office)	The online single-window system requires exporters to submit all export related documentation for approval in one place. It is open 24 hours a day, 7 days a week provides immediate processing of documents that do not require further evaluation.	It enables governments to electronically process information, documents and fees both faster and more accurately. In doing so, it increases the speed of customs handling and processing reducing the time products are in transit for international markets.
Tax Credit for Education and Training (SENCE)	Servicio Nacional de Capacitación y Empleo (National Training and Employment Agency)	This incentive allows firms to deduct the cost of training workers in specific workplace competencies, subject to a cap of 1% of total compensation costs. To qualify for this credit, employers must pay social security costs for participating employees. Courses must be approved by SENCE to receive this benefit and can vary from short term courses (< 8 hours) to longer courses with academic equivalence (>200 hours).	It facilitates training for employees in the sector, directly contributing to productivity.

<p>National Labor Skills Certification System (NLSCS)</p>	<p>Joint initiative between the Ministries of Economy, Education, Labor and Social Security</p>	<p>Skills and competencies for every job in the sector were profiled and compiled with the help of the private sector. These results were shared with technical training institutions to ensure that educational programs met industry needs. In addition, practical examinations were made available for workers already in the industry to certify their competencies regardless of how these were acquired.</p>	<p>It facilitates sector-wide competency improvements for labor and increases labor mobility contributing to productivity and quality improvements and standards compliance.</p>
<p>Flexible Labor Regulations for the Fruit Export Sector</p>	<p>Direccion de Trabajo (Ministry of Labor)</p>	<p>The law allows for short-term contracts for temporary workers in the fruit sector, as well as permitting variations in working hours.</p>	<p>It facilitates the provision of labor in peak periods (pruning and harvesting) in the value chain at competitive prices.</p>

Source: Authors

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