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The role of industry associations in export performance: comparative cases of South Africa's citrus and wine industries

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Abstract

South Africa's citrus and wine industries have achieved relative success in global markets to become the country's leading agri-food exports. However, the two industries have realised relatively different upgrading trajectories in global value chains (GVCs). The citrus industry quickly grew its export earnings to become the world's second largest citrus exporter, while the wine industry has been slipping the global ranks to become the world's thirteenth largest wine exporter from seventh place, with declining export earnings since 2010. The role played by industry associations in the export performance of each industry has been central. However, the roles of co-ordination and collective private governance for long-term industry growth, together with engagement with public governance, are not widely understood. Drawing on literature on upgrading in GVCs and collective organisation, this paper analyses the export performance of the two industries through critically reflecting on the key decisions and activities of the respective industry associations to tackle challenges for upgrading in export markets, highlighting the key factors underlying the differences in performance. We consider the composition and interests of member firms, access to and use of organisational resources, investments in collective industry goods and services, and the relationship with the government. We find that citrus and wine both have similar conditions regarding access to resources through industry levies, and the observed differences in export performance boil down to the activities and initiatives that the industries used the resources to invest in, and how they implemented the activities and initiatives, rather than the quantity of levies. It appears that the success of the citrus industry largely stems from the historical decisions of the organisation to invest in collective long-term research and technical capabilities directly creating dynamic efficiencies for producers and upgrading in the product mix. The study has important policy implications for African producers seeking to enter and to participate in agri-food GVCs. Coalitions to generate collective solutions and support long-term investments for African producers in GVCs are more crucial than ever in terms of building capabilities when stakeholders pull together, and industry bodies do not simply lobby for the short-term interests of their most powerful members.

Key words: citrus, wine, upgrading, exports, collective organisation, industry associations

1. Introduction

South Africa's citrus and wine industries have achieved relative success in global markets to become the country's leading agri-food exports. South Africa is the second largest citrus exporter in the world, after Spain, accounting for 12% of global exports, and the world's thirteenth largest wine exporter, accounting for just below 2% of global exports (in value terms) (TradeMap, 2024). Upgrading in both industries has been driven by the standards and requirements of export markets, in particular, of European supermarkets and key buyers and retailers in the EU (Chisoro and Roberts, 2023; Ponte, das Nair and Chisoro, 2023). While both industries have been relatively strong exporters, they have had quite different upgrading trajectories in GVCs and there has been a striking divergence in performance from around 2010 (Figure 1). The citrus industry grew its export earnings to overtake wine in 2010, while the wine industry became relatively stuck in low-quality bulk wine exports with average prices on exports stagnating since 2005 (Figure 4).

The role played by industry associations in the export performance of each industry has been central. However, the roles of co-ordination and collective private governance, together with engagement with public governance for supporting upgrading in export markets, are not widely understood. Following the wholesale de-regulation and liberalisation of agricultural industries in South Africa in 1997, citrus and wine comprised some of the early industries to organise through industry associations and to coordinate for upgrading in export markets through continuing essential industry functions previously performed by the former control boards (Mather, 1999; Mather and Greenberg, 2003). Citrus growers established the Citrus Growers' Association (CGA) in 1997. The wine industry established the South African Wine and Brandy Company (SAWB) in 2002, which was later replaced by the South African Wine Council (SAWIC) in 2006. SAWIC was recently replaced by South Africa Wine (SA Wine) in 2023.

Drawing on literature on upgrading in GVCs and collective organisation, the paper assesses the differences in export performance between South Africa's wine and citrus industries. The paper critically reflects on the key decisions and activities of the respective industry associations to tackle challenges for upgrading in export markets, and highlights the key factors underlying the differences in performance. The paper conducts a critical review of upgrading with the aim of understanding different forms of upgrading, while the literature on collective organisation is reviewed with a focus to understand the circumstances under which firms organise, the variables that affect the likelihood of achieving collective organisation, and the provision of collective goods and services. A core aspect of our conceptual framework is to enhance understanding of value chain upgrading by focusing on export performance and the roles of industry associations in value creation in export markets.

We consider the following four factors as the basis of our comparison between the citrus and wine industries: composition and interests of member firms, access to and use of organisational resources, industry investments in collective industry goods and services, and the relationship with the government. We find that citrus and wine both have similar conditions regarding access to

resources through industry levies, and the observed differences in export performance boil down to the activities and initiatives that the industries used the resources to invest in, and how they implemented the activities and initiatives, rather than the quantity of levies. It appears that the success of the citrus industry largely stems from the historical decisions of the organisation to invest in collective long-term research and technical capabilities directly creating dynamic efficiencies for producers and upgrading in the product mix. The study has important policy implications for African producers seeking to enter and to participate in agri-food GVCs. Coalitions to generate collective solutions and support long-term investments in GVCs are more crucial than ever in terms of building capabilities when stakeholders pull together, and industry bodies do not simply lobby for the short-term interests of their most powerful members.

The paper is structured as follows. Section 2 briefly reviews literature on upgrading and collective organisation. Section 3 describes the methodology and data sources. Section 4 applies the concept of upgrading to the analysis of the citrus and wine export performance. Section 5 critically reflects on the key decisions and activities of the respective industry associations to explain the differences in export performance. Section 6 concludes.

2. Upgrading and collective organisation

Upgrading

Upgrading refers to the different types of shifts and changes in activities that firms undertake to maintain or improve their competitive positions in global value chains. This is either through producing better products or moving into more skilled activities and market niches with entry barriers and less competition (Humphrey and Schmitz, 2002). Upgrading enables firms to improve their capacity to create value – a process driven by differential abilities to create profits and/or capture rents from specific monopoly conditions (Kaplinsky, 2019; Havice and Pickles, 2019). It is about improving firm performance and increasing competitiveness for the purposes of earning returns to both labour and capital from engaging in trade (Humphrey and Schmitz, 2002). It follows that the concept of upgrading has significant links to the broader literature on international competitiveness (Porter, 1990; 1998; Gereffi, Korzeniewicz and Korzeniewicz, 1994).

The GVC literature is often based on four categories of economic upgrading (Gereffi, 1999; Humphrey and Schmitz, 2002):

1. *Process upgrading:* transforming inputs into outputs more efficiently by reorganizing the production system or introducing superior technology
2. *Product upgrading:* moving into more sophisticated product lines (which can be defined in terms of increased unit values)
3. *Functional upgrading:* acquiring new functions (or abandoning existing functions) to increase the overall skill content of activities
4. *Inter-sectoral upgrading:* firms of clusters move into new productive activities through applying competences acquired in one function of a chain in a different sector/chain.

Of relevance to this paper, we apply the first three types of upgrading: process, product and functional as interrelated and non-linear processes of upgrading. Building on these types of upgrading, we draw from other literature that has sought to broaden the concept of upgrading to include a variety of ways in which firms can improve their positions in the chain - making it more applicable across a range of industries (Ponte and Ewert, 2009; Rossi, 2019; De Marchi et al., 2019). Humphrey and Schmitz's traditional view of upgrading as ascending the value chain or consistently producing more sophisticated value-added products is considered narrow and only but one of the possible trajectories of upgrading (Ponte, 2019; Gereffi, 2019; Ponte and Ewert, 2009).

In light of these arguments, this paper takes a broader, multi-dimensional and dynamic approach to upgrading to go beyond production to include other aspects in the supply chain. For example, process upgrading is broadened to include improved practices related to managerial or leadership models, logistics, market access, time-to-market, compliance with standards, product development, and delivery of consistent quality. These aspects go beyond the traditional narrow understanding of process upgrading as increased efficiency in the transformation of inputs into output through improved technologies (Gereffi, 2019; Ponte and Ewert, 2009). A similar approach is also taken regarding product upgrading to include effects on product quality that are not necessarily associated with producing more sophisticated products. Product upgrading can include positive product-related strategies that do not transform the nature of the product (Ponte, 2019). Such aspects include forward contracts, volume premia, consistency, and diversified product portfolio (Ponte and Ewert, 2009). This expanded view of upgrading is important for analysing the selected export-oriented agri-industries given the sector-specific constraints to the types of product and process upgrading that can take place, and the need to comply with standards and requirements of global buyers in order to access and to maintain markets.

Furthermore, upgrading in this sense can also be understood in terms of competitiveness, which entails the firm's ability to meet consumers' demand – in terms of quantity, quality, price and timeliness of delivery; adjusting to changes in the environment; and access to market information (Falciola, Jansen and Rollo, 2020; Porter, 1998; Buckley, Pass and Prescott 1988). As such, an analysis of economic upgrading needs to consider both quantitative measures of costs, prices and profitability, and qualitative indicators of non-price factors such as quality in relation to a firm's participation in GVCs (Pasquali, Krishnan and Alford, 2021).

Collective organisation

The second strand of literature, applied in this paper, emphasises the role of inter-firm co-operation for upgrading. How firms organize their collective interests including how they aggregate their interests and relate to each other is important for the choice of strategies and initiatives they pursue to realise upgrading. The paper focuses on industry associations as key economic organisations playing an important role in aggregating interests, solving collective action and coordination problems for generating competitive advantage in agri-export industries (Olson, 1965; Whitfield and Therkildsen, 2011). Coordination is essential for upgrading. It can promote collective learning and enables pooling of resources to share costs and risk; sharing skills, technology, and innovation;

accessing services and information, and forming platforms for setting, implementing, and upgrading industry standards (Coles and Mitchell, 2011; Larsen and Nsimbila, 2017).

Collective action mostly takes place through clear formal organisations. This is referred to as 'organised and bounded' collective action (Olson, 1965; Meinzein-Dick, Di Gregorio and Mccarthy, 2004; Vanni, 2014). Organisations' primary function is to advance the common or collective interests of its members (Olson, 1965). Groups of individuals therefore form an organisation when they have a common or collective interest, and when they share a single purpose or objective around which an organisation can perform a function (Olson, 1965). The function of an organisation, large or small, is to work for some collective benefit that will benefit all the members of the group in question (Olson, 1965).

Collective action is an action taken by a group on its behalf through an organization, in pursuit of members' perceived shared interests (Marshall, 1988; Wade, 1987). Although the existence of a collective or shared interest is taken as the context within which collective action is studied, scholars of this field devote less theoretical focus to the interest itself as fundamental, and more to the social and organisational processes that make action possible (Oliver, 1993; Vanni, 2014). Therefore, the type of organization and how it supports such action is important when analysing the dynamics of collective action (Vanni, 2014).

To achieve any common goal or to satisfy any common interest requires the provision of a collective good for the group (Olson, 1965, Wade, 1987; Marwell and Oliver, 1993). The provision of collective goods is generally considered the fundamental function of organisations (Olson, 1965, Oliver, 1993). Collective goods are 'inseparable, generalised benefit' (Olson, 1965). A collective good cannot exclude or keep other member firms from sharing in the consumption of the good, as can happen in the case of non-collective goods (Olson, 1965; Deneulin, 2007).

To fund collective goods and their activities, organisations need financial resources, and they must have mechanisms in place to extract payment from its members (Olson, 1965; Almirall, 2009). Although all of the members of the group have a common interest in obtaining the collective benefit, they have no common interest in paying the cost of providing the collective good (Olson, 1965). Each member would prefer that the other members pay the entire cost, while they receive any benefit provided irrespective of whether they had borne part of the cost or not (Olson, 1965; Marwell and Oliver, 1993). Such challenges are more prevalent in bigger groups, where the benefits of a contribution would have to be divided up among more people, and any one person's contribution would be less likely to make a noticeable difference in the outcome (Oliver, 1993). Therefore, large organisations cannot support themselves with voluntary contributions or without providing some sanction, or some attraction different from the collective good itself, that will lead individuals to help bear the burdens of maintaining the organisation (Olson, 1965).

Organisations play a crucial role regarding the development and the success of collective action. Several factors influence the structure of organizations, which in turn influence the process and level of collective action and its impact on performance outcomes (Meinzein-Dick, Di Gregorio

and Mccarthy, 2004). To analyse the performance of collective action related to collective goods and business/industry associations, I adapt Agrawal's (2001) conceptual framework which draws from the analyses conducted by scholars of common property - Wade (1988), Ostrom (1990) and Baland and Platteau (1996). Agrawal (2001) groups the key factors for successful collective action in a set of four basic categories: the type of collective goods, group characteristics, institutional arrangements and external environment.

According to this framework, collective action is affected by the characteristics or the type of collective goods involved and knowledge of the collective good. The type of knowledge includes scientific expertise (Agrawal, 2001; Vanni, 2014). Other characteristics of the collective good include the monetary and time cost of the collective good.

The second factor relates to the characteristics of the group involved. Characteristics of groups, among other aspects, relate to group size, different types of heterogeneity/the group's degree of homogeneity, power relations among subgroups, appropriate leadership and the process by which the organisation makes and implements collective decisions (Almirall, 2009; Gautam, 2007; Meinzein-Dick, Di Gregorio and Mccarthy, 2004).

Heterogeneity is the diversity of group members (Almirall, 2009). Group members are heterogenous in a number of dimensions including heterogeneity in interests, assets, ethnicity and identities (Drazen, 2000; Olson, 1965; Agrawal, 2001). Conflict of interest is an important dimension of heterogeneity that has been widely discussed (Olson 1965; Quiggen 1993; Varughese and Ostrom 2001, Gautam, 2007). Although individual actors that belong to an organisation are presumed to have a common interest, they also have purely individual or antagonistic interests, different from those of the others in the organisation or group (Olson, 1965). This creates conflict of interests between different groups in the organisation. Only when there is heterogeneity of interests are questions of power and authority relevant (Drazen, 2000). Conflict of interests cause political constraints and the need to make collective choices in the face of those conflicts. How then an organisation makes collective decisions that affect it as a whole when individual members or group members have conflicting interests becomes an important condition for achieving collective action (Drazen, 2000). As such, the process by which people make and implement collective decisions has a strong bearing on collective action and the process of institutional change (Meinzein-Dick, Di Gregorio and Mccarthy, 2004).

The success of collective action is also determined by the involved institutional arrangements. Mantino (2010) links the success of organisational strategies to the 'thickness' of local institutions, which is related to the combination of 'human capital' (knowledge resources), 'social capital' (trust, reciprocity and other social relations) and 'political capital' (capacity for collective action). Lastly, external forces and authorities also affect collective action. Key is the need for government to play a pro-active role in setting basic guidelines, rules (also with penalties and sanctions) and public objectives which may encourage collective action (Vanni, 2014; Ayer 1997).

3. Methodology and data sources

Drawing on the comparative industry case studies of citrus and wine, the paper builds on insights from past research projects conducted between 2017 and 2024 drawing on in-depth interviews with firms and stakeholders in different regions across the country. The interviews were identified through a purposive sampling technique using registers from the industry associations, consultations with experts, online searches and established networks and contacts within the industries. The study adopted purposive sampling to capture a wide range of perspectives and to identify common themes that are evident across various stakeholders and firms that exhibit different attributes, experiences and specialist knowledge, and were capable and willing to participate in the research. Given the focus of the study, which seeks to understand qualitative insights into the history and processes of collective organisation in industry associations, member interests, key industry decisions and initiatives, industry engagements and relationship with government, challenges for exporting, etc.; purposive sampling allowed for a more extensive engagement and exploration of issues with selected stakeholders and firms.

For this paper, we specifically draw on interviews conducted for two projects. The first project was conducted between 2019 and 2022 focusing on innovation and inclusive industrialization in agriculture and agro-processing. 40 interviews were conducted for this project. Firm interviewees included citrus growers of various sizes located in the country's main citrus-growing regions of Limpopo, the Western Cape and the Eastern Cape. We also conducted interviews with firms producing key inputs in cultivars, crop protection solutions, trees seedlings and farming equipment. Stakeholder interviewees included research institutions, representatives of industry associations, academics that have conducted research in the sector, and government officials working with the industry.

The second project was undertaken in 2022 and 2023 with a focus on power and inequality in the wine value chain, and the role of sustainability in shaping both. 84 interviews were conducted with wine industry stakeholders in Cape Town South Africa, including representatives of government, industry associations, NGOs, research institutions, media, logistics companies, and direct wine value chain entities of various sizes (private cellars, estates, producer wholesalers, producer cellars, wholesalers, distributors and retailers). The list of interviews cited in this paper is included in the Appendix Table 1.

The interview material is supplemented with analysis of secondary information and official statistics from publicly available sources. To assess industry performance, we used quantitative data on production, exports, export shares, composition of exports, unit export prices and industry levies. The data was sourced from the International Trade Centre (TradeMap), the industry associations' annual reports and statistical booklets, and the National Agricultural Marketing Council.

4. Upgrading in global value chains: export performance of South Africa's citrus and wine industries

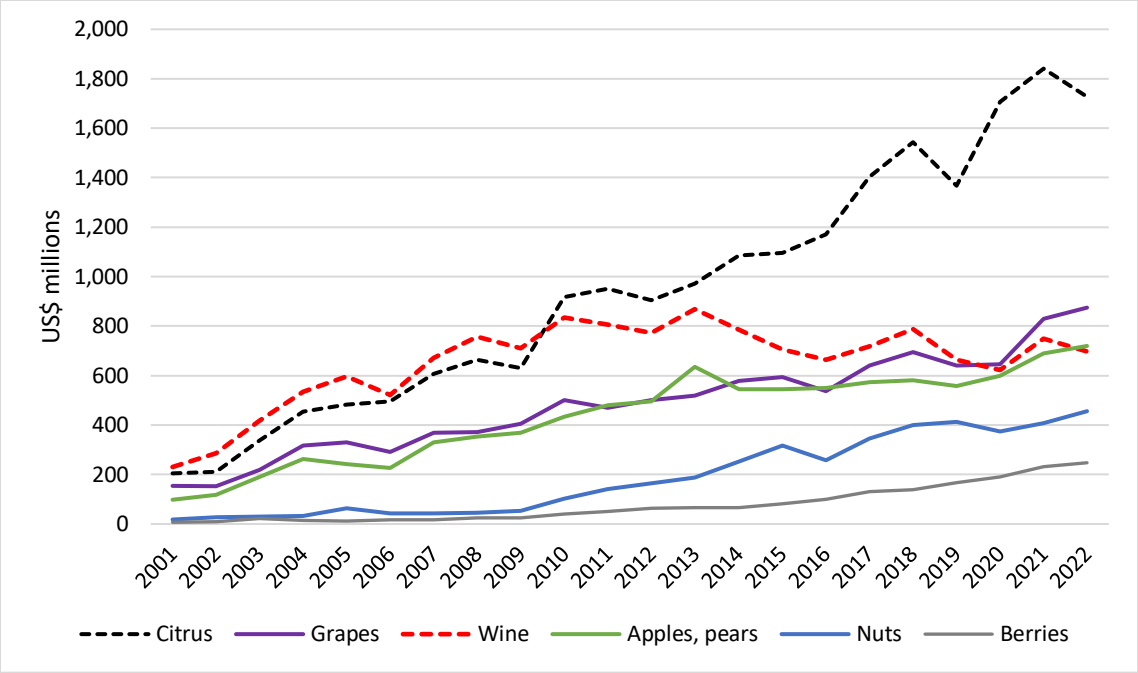
South Africa's citrus and wine industries have achieved relative success in global markets to become the country's leading agricultural exports. South Africa is the second largest citrus exporter in the world, after Spain, accounting for 12% of global exports, and the world's thirteenth largest wine exporter, accounting for just below 2% of global exports (in value terms) (TradeMap, 2024). European markets are very important for each of the industries with the EU accounting for 44% of South Africa's citrus exports and 55% of wine exports by value in 2023 (TradeMap, 2024).

The wine and citrus industries in South Africa are part of global value chains which shape their market access and governance. European supermarkets and key buyers such as the alcohol monopolies of the Nordic countries have substantial power to govern their suppliers, setting private standards in addition to government regulations. Upgrading in both industries has been driven by the standards and requirements of these export markets (Chisoro and Roberts, 2023; Ponte, das Nair and Chisoro, 2023).

Global value chain relationships are also important for inputs. In citrus these inputs include varieties, over which there are intellectual property rights, and plant treatment chemicals. The inputs are typically highly concentrated with only a very few international businesses from which South African producers can readily source if they are to meet market expectations (Chisoro and Roberts, 2023; Chisoro-Dube and Roberts, 2021). In wine, inputs include recyclable and greener forms of packaging which can only be sourced from international markets (das Nair, Chisoro and Ponte, 2023; Ponte, das Nair and Chisoro, 2023).

While both industries have been relatively strong exporters, they have had quite different upgrading trajectories in GVCs and there has been a striking divergence in performance from around 2010 (Figure 1). The citrus industry continued to grow export earnings while the wine industry's export earnings stalled.

Figure 1: Citrus and wine export earnings



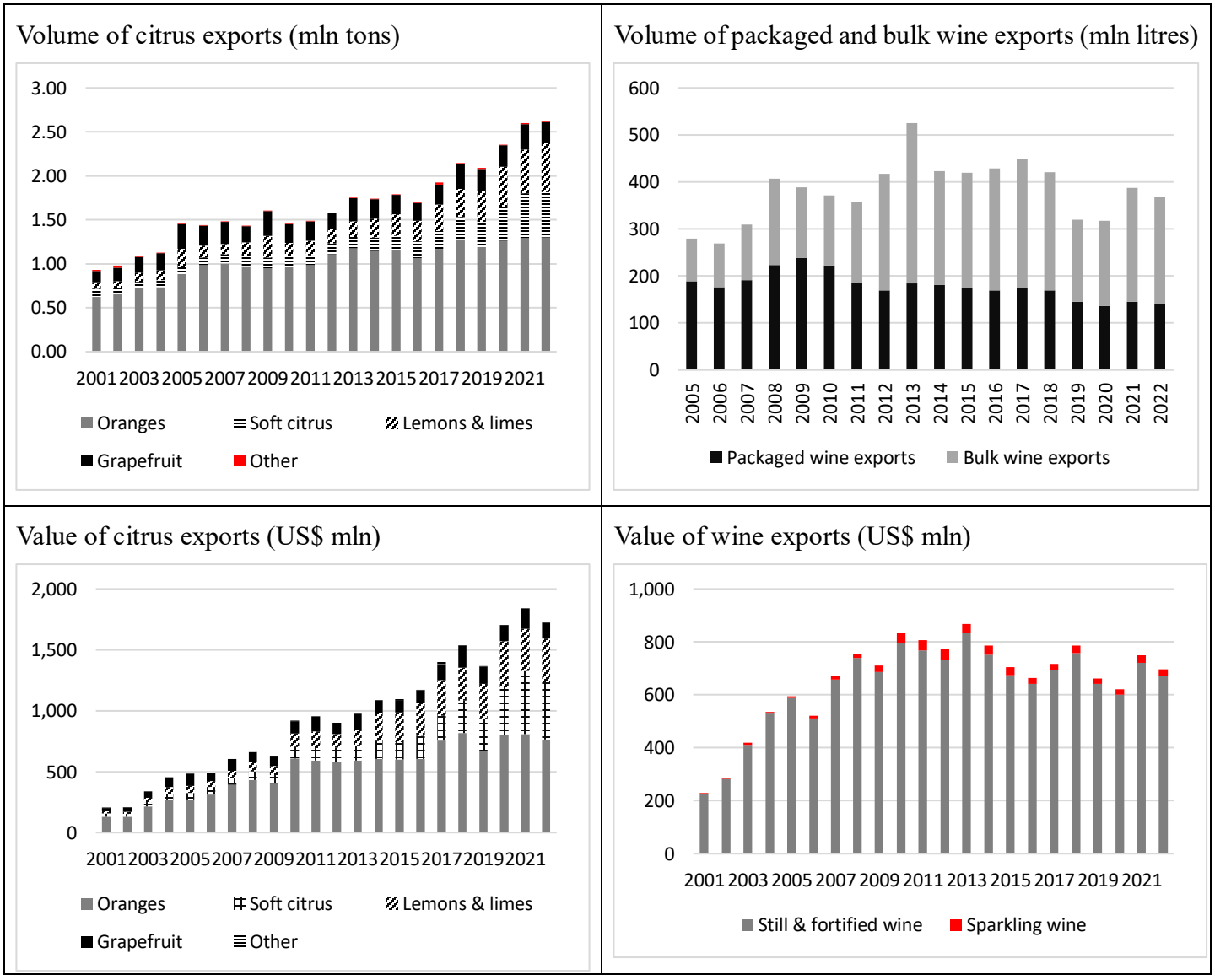
Source: TradeMap (2024)

The contrasting performance between citrus and wine is reflected in the value and composition of exports (Figure 2). This reveals the failure of South African wine to perform in the premium categories to increase the value earned from exports. South Africa is struggling to grow its wine export volumes and to shake off its image as a low-value, bulk wine exporter (Figure 2). Average wine exports are around 400 million litres of which the majority is exported in bulk to cut costs, rather than bottled (Figure 2). The profile of wine exports changed dramatically between 2005 and 2022 as Figure 2 shows. In 2005, 68% of exports were packaged and 32% were in bulk form. In 2022, 62% of exports were bulk, and 38% packaged. Although bottled wine exports account for only 38% of exports, they contribute for 77% of the value of all wine exported from South Africa in 2022 (Alford, das Nair, Visser, Ponte and Chisoro, *forthcoming*). As such, the quick growth in bulk exports is creating tensions within the industry between the strategic intent of industry bodies to 'premiumize' South African wine away from low quality perceptions, and the necessity to move volume off tanks for the next harvest (Ponte, das Nair and Chisoro, 2023).

By comparison, two thirds of citrus production is exported as high value fresh fruit, generating 95% of total citrus earnings per annum (Interview 6). The value of South Africa's citrus production has increased by a much greater extent than the volumes due to the increasing returns from exports (Figure 2). Specifically, soft citrus and lemons and limes underpinned the export growth from 2010, quadrupling in value from US$202 million in 2010 to US$829 million in 2022 (Figure 2). This shows that what is exported matters; in terms of growing new and improved varieties, and meeting the quality, standards and requirements of export markets.

Wine exports are almost entirely of still wine, and it is less easy to measure the sales in premium segments (Figure 2). Although South Africa's quality of wine has improved since the 1990s, driven to a large extent from external exposure to international markets and improvements in quality management, both in winemaking and viticulture, the industry has struggled to move up on price points (Ponte and Ewert, 2007). South Africa sold large volumes of 'cheap and cheerful' wine into European markets for many years after 1994, which is associated with low prices (Alford, das Nair, Visser, Ponte and Chisoro, *forthcoming*; Ponte, das Nair and Chisoro, 2023; Interview 11). The industry therefore grew in the basic quality segment of the global value chain, selling in the popular price segments of supermarket chains (Ponte and Ewert, 2007) where the average price per litre of still and fortified wine has remained around US$2/l (Figure 4). While sparkling wine export prices have trebled from 2015 to US$15/l, these exports remain extremely small (Figure 4).

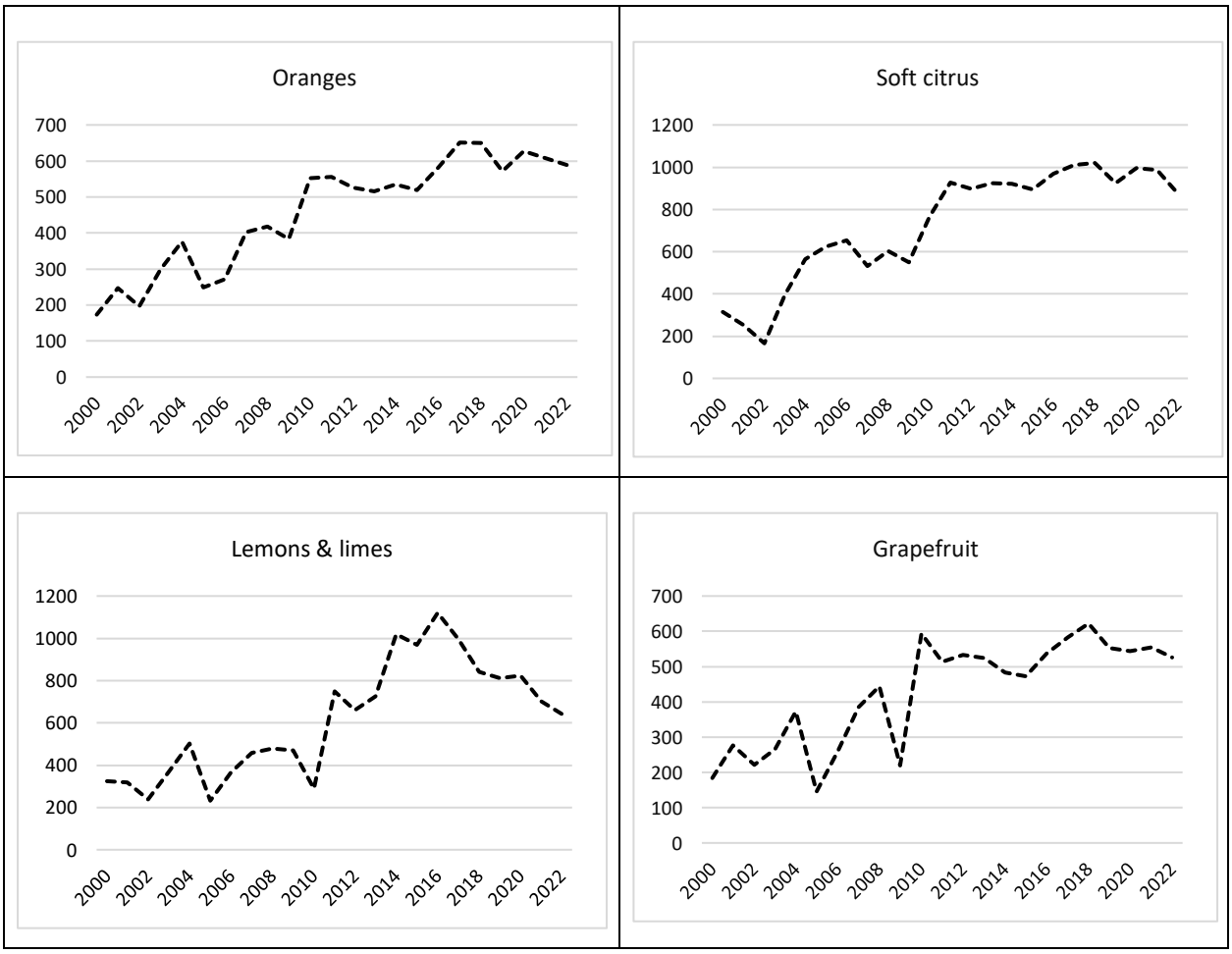
Figure 2: Composition of citrus and wine exports (in value and volume terms)



Source: TradeMap 2024; SAWIS Statistical Handbook 2005 - 2022

On the other hand, the price earned on exports of soft citrus, and lemons and limes, as well as for oranges and grapefruit, increased substantially, especially from 2009 onwards although prices have been declining since 2019 (Figure 3). While export prices of oranges and soft citrus were similar in 2002 at around US$200/tonne, the prices of soft citrus quintupled to around US$880/tonne in 2022 compared with the trebling in orange prices to around US$600/tonne.

Figure 3: Unit prices of export citrus products (US$/tonne)



Source: CGA Industry Statistics. Export prices are Free on Board (FOB) prices. The Rand/US dollar exchange rates were sourced from the South African Reserve Bank and are Middle rates.

Figure 4: Unit prices of export wine products (US$/litre)

Source: Author's own computation using data on wine export volumes from the South African Wine Industry Statistics & value of wine exports from TradeMap

The next section turns to discuss the role of collective organisation through industry associations to explain the above outcomes in upgrading in export markets, including how both industries have addressed the challenges of upgrading in export markets. However, it is important to first understand the nature of challenges for upgrading in export markets for each of the industries.

The main challenge in export citrus is complying with sanitary and phytosanitary standards and requirements in key export markets, including ensuring full product traceability (Chisoro and Roberts, 2023; Interview 6, 9). Phytosanitary standards are particularly important as the main factor shaping global trade in fresh fruit. Furthermore, the political nature of these issues, which require government-to-government negotiations, makes it even more difficult to prove compliance (Roberts, Andreoni and Chisoro, 2022).

South Africa's wine industry on the other hand struggles with issues of low quality, low margins in key export markets, growing environmental standards and certifications in main export markets, and limited market access in more profitable markets (Ponte and Ewert, 2007; Ponte, das Nair and Chisoro, 2023). Increasing bulk exports go against the industry's efforts to premiumize and improve the industry's image. Although the industry has improved its quality of wines, it has grown in the basic quality segment of the global value chain, selling in the low price segments of supermarket and retail chains in UK, Germany and the Netherlands where margins remain extremely low (Ponte and Ewert, 2007). The industry has also had limited success in opening up more profitable markets such as the United States and it is still far from a visible presence (Ponte and Ewert, 2007). Furthermore, wine producers are increasingly required to meet several environmentally sustainable standards and certifications driven by different buyers in the North (das Nair, Chisoro and Ponte, 2023). Many of the improved processes and obtained certifications are part of what is now expected as 'a given' by retailers, and do not provide a competitive

advantage. They are now necessary for potential entry into a market or maintaining market access (Ponte, das Nair and Chisoro, 2023).

5. Collective organisation for export upgrading: the role of industry associations

Focusing on the wine and citrus industry associations, we analyse the different roles played by collective organisation in how the citrus and wine industries tackled the challenges of upgrading in export markets, highlighting the key factors underlying the differences in performance. We consider the following four factors as the basis for our industry comparisons: composition and interests of member firms, access to and use of resources, investments in collective or shared goods and services, and relationship with the government.

First, we describe the processes and nature of collective organisation through industry associations and the circumstances that led firms to organize and to coordinate. South Africa's wholesale de-regulation and liberalisation of agricultural industries in 1997 drastically reduced the role of the state in various functions. Before de-regulation, the agricultural sector operated under statutory interventions in the marketing of agricultural products introduced under the 1937 Marketing Act (later replaced by the 1968 Marketing Act) (NAMC, 2009, 2010, 2011, 2012, 2013, 2014, 2019, 2021, 2022). The agricultural marketing system consisted of government supported farmer-dominated boards controlling the movement, pricing, quality standards, selling and supply of large volume farm production in an effort to stabilize prices. Control measures included registration, records and returns, pool schemes, single channel marketing, surplus removal schemes, and levies. Statutory levies were used to fund functions performed by the control boards including information, grading, research, and quality control (NAMC, 2009, 2010, 2011, 2012, 2013, 2014, 2019, 2021, 2022).

In 1997, South Africa's agricultural sector was de-regulated in terms of the new Marketing of Agricultural Products Act (No.47 of 1996) (NAMC, 2009, 2010, 2011, 2012, 2013, 2014, 2019, 2021, 2022). The Act provided for the dissolution of the control boards along with single channel marketing arrangements in almost all agricultural products (Sandrey and Vink, 2008; Mather and Greenberg, 2003). The immediate and most dramatic effects of de-regulation on agricultural industries were that: grower levies were no longer compulsory; single-channel exports were replaced by multi-channel exports; and industry structures and services had to be transformed (Chisoro-Dube and Roberts, 2021). The purpose of the 1996 Marketing Act was to promote market liberalization or deregulation, to make industry structures more representative, and to promote transformation in the agricultural sector (NAMC, 2009, 2010, 2011, 2012, 2013, 2014, 2019, 2021, 2022). This informed the present-day role of the state to focus on market access and economic inclusion of previously disadvantaged individuals across the agricultural sector.

Recognizing the need to continue certain essential functions that were previously performed by the former control boards, firms and directly affected groups across different agricultural industries decided to organise and to coordinate (NAMC, 2009, 2010, 2011, 2012, 2013, 2014, 2019, 2021,

2022). The citrus growers formed the South African Citrus Growers Association (CGA) in 1997 to represent the interests of growers of export citrus and to carry out certain functions previously carried out by the Citrus Board.[1] These functions included retaining research capacity; and market access. [2] Since then, the CGA has added other grower identified focus areas including logistics, information, transformation, and market research.[3] The industry functions are carried out through the CGA's subsidiary companies that focus on delivering its mandate. These are either not-for-profit companies that provide shared services and support for growers, or commercial companies that sell products and services to earn returns (Chisoro-Dube and Roberts, 2021). As of 2020, the CGA had approximately 1,564 commercial grower members in South Africa and Southern Africa (Zimbabwe, Eswatini, Botswana and Mozambique which are members of the Association) (Bowman and Chisoro, 2024).[4]

Like the citrus industry, the wine industry formed its first industry body in 2002, the South African Wine and Brandy Company (SAWB) as the inclusive and representative body of the wine industry (SAWB, 2005). SAWB represented producers, cellars, trade and labour (Ponte and Ewert, 2007). The industry strategy sought to increase global competitiveness and profitability, and to generate equitable access and participation in the wine value chain (Winetech, 1999). The industry's strategic goals were implemented through SAWB's three business units – SA Wine Industry Information and Systems (SAWIS), Wine Industry Network of Expertise and Technology (Winetech) and Wines of South Africa (WoSA) (SAWB, 2005). WoSA carries out generic marketing and promotion of South African wine in key export markets. Winetech conducts research and development and technology transfer, while SAWIS is responsible for knowledge and information development (SAWB, 2005). In 2006, SAWB was restructured to become the South African Wine Industry Council (SAWIC) as the representative industry structure. It represented grape farmers, wine producers, cellars, labour, civil society, black farmers, manufacturers, distributors and trademark owners (SAWB, 2005). Like SAWB, SAWIC sought to ensure international industry competitiveness and profitability. This would be delivered through four business units comprising of the already existing SAWIS, Winetech, and WOSA plus the newly established Development and Transformation Unit (SAWB, 2005; Ponte and Ewert, 2007; Van Rooyen, Esterhuizen and Stroebel, 2011). Of recent is the newly established umbrella body for the South African wine and brandy industry, South Africa Wine (SA Wine), formed in 2023 (VinPro, 2023). The new body entails amendment in industry support structures to achieve improved collaboration and impact, as well as a more aligned and focused approach to make the industry more resilient, profitable, and sustainable (VinPro, 2023). The industry body is represented by two governing bodies, VinPro and SALBA (South African Liquor Brand Owners Association). VinPro represents the agricultural or production tier of approximately 2600 members consisting of wine

[1] www.cga.co.za
[2] https://pmg.org.za/committee-meeting/310/
[3] www.cga.co.za
[4] www.cga.co.za

grape farmers, wine grape processors and wine producers (VinPro, nd).[5] Beyond the production tier, SALBA represents the distribution, wholesale and retail tiers and it is made up of 22 members (VinPro, nd; Fridjhon, 2023). The industry functions are implemented through four business units (Winetech, WoSA, Sawis and the Transformation Unit).

To understand the roles of co-ordination and collective private governance for long-term industry growth, we first analyse the composition and interests of member firms.

5.1 Composition and interests of member firms

Sustained growth requires balancing of different interests to sustain a functional broad coalition interested in long-term development with shared returns. The CGA's effective leadership is due to it unambiguously representing export growers' interests, even while these are the most dispersed group in the value chain. Other actors in the value chain are input companies in cultivars and crop protection compounds, packhouses, and export and marketing companies. The inputs level in cultivars and crop protection solutions is highly concentrated. This means that in terms of power and governance, a balance of interests has been promoted with regard to concentrated input suppliers, and concentration in export and international marketing.

On the other hand, the wine industry structures have been inherently unstable (SAWB, 2005; Ponte and Ewert, 2007; Ponte, Roberts and van Sittert, 2007). Through the formation and dissolution of various industry bodies, the wine industry has sought to create a representative industry structure that can provide the requisite leadership to successfully develop and implement a credible industry-wide strategy capable of addressing industry objectives. The industry is represented by two governing bodies (VinPro and SALBA) which include groups at different levels of the value chain producing different products (spirits and beer vs wine) and who may not necessarily have the same interests. For example, SALBA consists of major spirits and beer producers alongside grape farmers and wine producers represented under VinPro. Often, the wine industry's interests are swamped by the agendas of the major spirits and beer producers (Fridjhon, 2023). This points to a focus on common areas of action such as, notably, marketing and not initiatives at other levels of the value chain such as primary grape growing where interests may not be aligned.

To ensure export success, industry associations require that member-firms have a common interest and single objective around which they can organize. In citrus, a strong collective understanding on the part of growers of what is required to build export success has ensured broad consensus in building substantial levies and making the investments required for future performance. The growers understand that research and development is critical to the industry, and they give the CGA the mandate to apply for a mandatory carton levy that drives research in the industry (Interview 6, 9). The citrus industry has grown quickly to become the largest levy collector in 2022 accounting for approximately 14% of total industry levies of R735 million following their increase in the levy collection by ~150% in 2021 (Interview 8). This sets the citrus industry apart from any

[5] https://vinpro.co.za/

other industries although there are similarities with this arrangement in the deciduous industry (Interview 6).

The ability of the citrus growers to work together, in part due to the strength of the growers through the CGA, provides the basis for agreements to protect the good standing of the industry. A core industry challenge for citrus growers pertains to complying with phytosanitary standards in export markets (Cramer and Chisoro-Dube, 2021; Roberts, Andreoni and Chisoro, 2022). This is particularly in the context of pests and diseases that may destroy the industry. To protect the good standing of the industry, the CGA introduced a voluntary centralised system of plant material production and procurement, which ensures that the plant material supplied to nurseries is disease free through requiring that nurseries can only buy plant material from a single source (Interviews 6, 9). About 98% of all plant material goes through the central system voluntarily (Interviews 6, 9). The industry self-regulates itself and all industry players work through the system voluntarily (Interview 9).

The wine industry on the other hand is fragmented (Ponte and Ewert, 2007) coupled with often conflicting member interests. This has meant a weak collective understanding of what is required to build export success. The industry's challenges around low margins in its main end-markets, low profitability and limited market access have informed the industry bodies' strategic efforts to improve global competitiveness and profitability through improved wine quality (Ponte and Ewert, 2007). While the industry's strategic talk focuses mainly on quality, there is a differing set of views when it comes to wine premiumization strategies in the industry (das Nair, Chisoro and Ponte, 2023). One view is that South Africa needs to sell wines for higher prices in general and needs bigger brand leaders in the international market at the right price, similar to what the Australians and Chileans have done. Others suggest that premiumization should be built upon the strength of the very well developed and sophisticated wine tourism industry but that producers also need to be better at selling stories – including terroir, microclimate, biodynamic and regenerative viticulture. Another perspective on premiumization is that South Africa should be playing mainly a niche market role, based on quality, site and regional specificity instead of selling cheap wine at volume and in bulk – given the low profitability of grape farming for wine. Different from the above is the perspective that bulk wine of clean quality is in demand anyway, and it allows operators to manage cash flows; therefore, whatever happens at the top end of quality, there is space for cheap bulk wine and that other producing countries that sell cheap wine are also able to sell very expensive wines (das Nair, Chisoro and Ponte, 2023).

The wide differences in industry opinions on quality and the style of wine to focus on has led WoSA to focus on biodiversity to market and sell South African wine abroad (Ponte and Ewert, 2007). This is based on the idea that the Western Cape's rich biodiversity can be translated into a great variety of wines (Ponte and Ewert, 2007). Hence, marketing is seen as the main way forward, both at the industry and individual company levels (Loubser 2001; Rabobank 2004; Wood and Kaplan 2005). Overall, the wine industry has failed to develop a forward-looking integrated focus (Fridjhon, 2023) that can address industry challenges for export success.

In addition, the divide between winners and losers among wine cellars and wine grape farmers continues to widen the gap between the organisation's member firms. The wine grape producers continue to face declining profitability over the past decade due to rising costs of production (electricity, fertilizer and labour costs, increasing excise duties, and droughts), shrinking profit margins and stagnant wine grape prices (das Nair, Chisoro and Ponte, 2023). In 2022, 9% of growers were financially sustainable, 50% made low profits, 3% broke even, and 38% made losses (das Nair, Chisoro and Ponte, 2023; Ponte, das Nair and Chisoro, 2023). These trends have seen grape wine farmers deserting the industry, and several hectares of vineyards being removed every year, a trend that has been happening for the past least ten years (Fridjhon, 2023; Ponte, das Nair and Chisoro, 2023). Many grape growers are moving into other crops (das Nair, Chisoro and Ponte, 2023; Interviews 12, 14, 15, 16). Between 2012 and 2022, total hectares planted under vines decreased by 12% coupled with aging vineyards while the number of wine grape producers decreased by 4.9% (Alford, das Nair, Visser, Ponte and Chisoro, *forthcoming*). These trends have largely impacted the smaller independent growers (Fridjhon, 2023; Ponte, das Nair and Chisoro, 2023).

5.2 Access to and use of resources

The mobilisation and use of resources in each industry is mainly through statutory levies administered through the industry bodies under government approval. While the application process is voluntary, once approved it is a compulsory process. For an industry to apply for statutory levies, two thirds of the levy payers and representing two thirds of production must support an application (NAMC, 2009, 2010, 2011, 2012, 2013, 2014, 2019, 2021, 2022; Interview 6, 8). The government then exercises statutory powers for the levying through the industry bodies and the levies are gazetted for four-year periods at a time (NAMC, 2009, 2010, 2011, 2012, 2013, 2014, 2019, 2021, 2022; Interview 8).

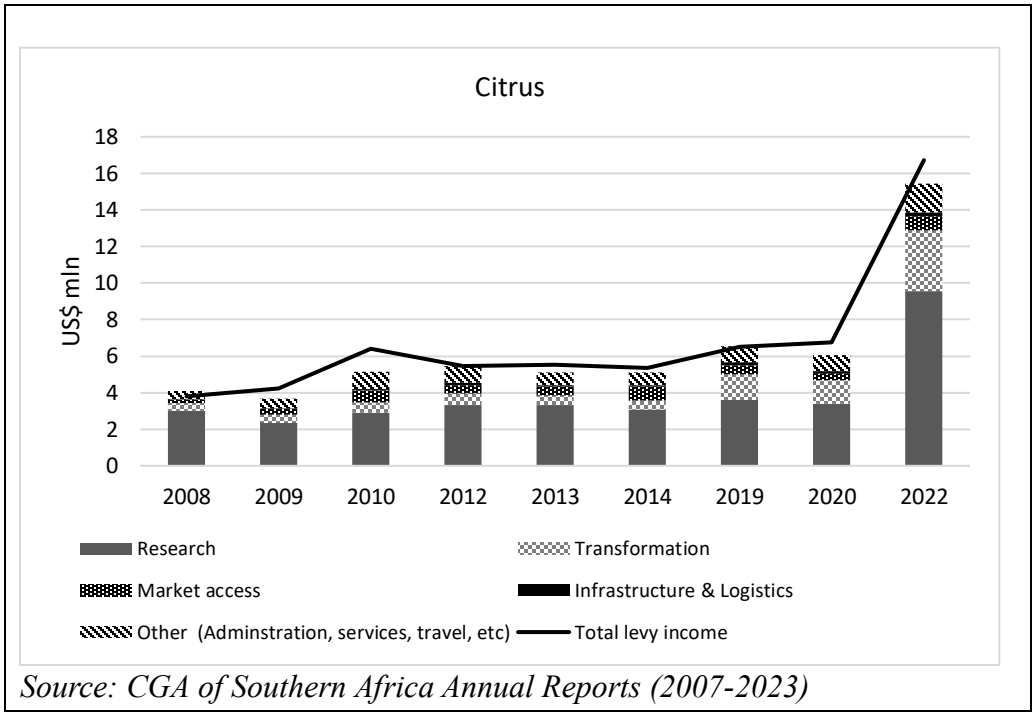
The citrus and wine industries have administered a statutory levy since the early 2000s. In citrus, the statutory levy is charged on every carton exported by approximately 1,564 commercial grower members (CGA, 2020). In wine, a statutory levy is charged on both local and export wine sales and is largely volume based calculated per litre (Pretorius, 2019). The statutory levy is paid by approximately 3,126 primary grape producers, wine cellars and bulk wine buyers (SAWIS, 2022).

The levies fund core industry activities like research and development, market access/export promotion and transformation; in line with government's stipulated guidelines on expenditure of statutory levy income. The approval of statutory levies is subject to the following conditions: that 70% of levy income be spent on activities such as research, information and other functions, a maximum of 10% on administration and at least 20% of the levies must be used for transformation (NAMC, 2009, 2010, 2011, 2012, 2013, 2014, 2019, 2021, 2022; Interview 8).

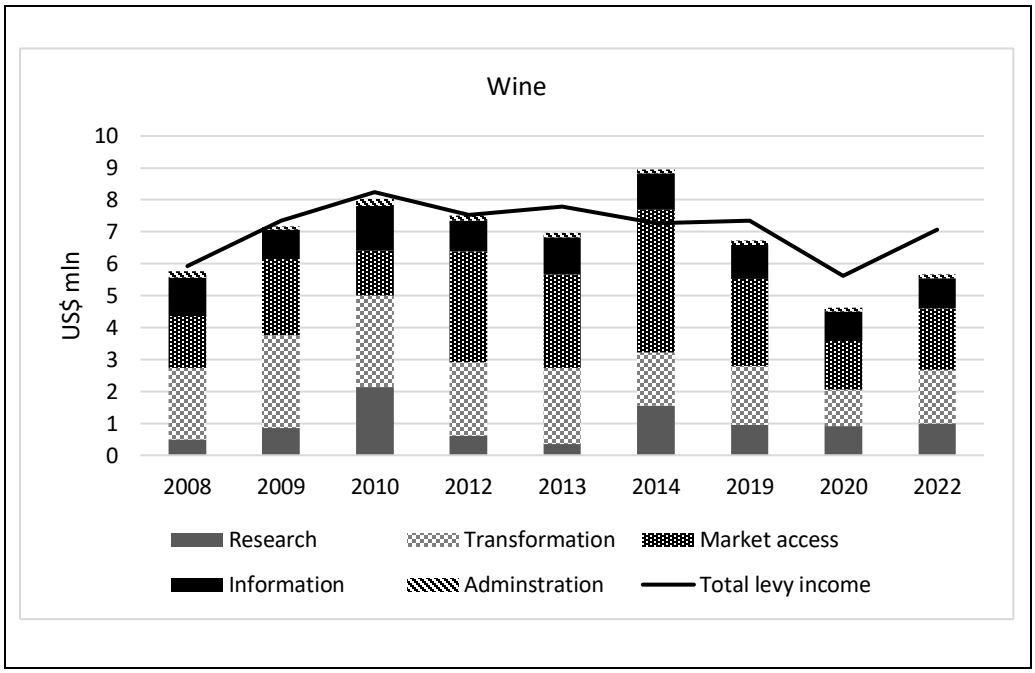
Wine levies were higher than citrus levies until 2020 (Figure 5). While the amount of levies matter for the industry's ability to fund its functions and provide collective goods, the case of citrus and wine implies that it is not the amount of resources which explains the differences in performance.

Citrus and wine differ in terms of the proportions spent on specific activities. In citrus, research and development has accounted for approximately 60% of the total levy. In wine, a larger portion of the industry levies has been directed towards market access and export promotion, accounting for 34% of total levy expenditure, while research and development has been just 18% of the total. Each industry has allocated a substantial amount to transformation, as required by government, comprising 20% and 29% of total levy expenditure in citrus and wine, respectively (Figure 5).

Figure 5: Levy income and expenditure



Source: CGA of Southern Africa Annual Reports (2007-2023)



Source: National Agricultural Marketing Council Status Report on Statutory Measures (2008 – 2022)

It follows that citrus and wine both have similar conditions regarding access to and use of levies. Both industries have stable resourcing, which has ensured independent and ongoing resources for the different industry activities and programmes (Chisoro-Dube and Roberts, 2021). Both industries have a four-yearly cycle of approval of levies, which holds them accountable for using the resources in ways that most benefit the industries. The levy approval process also sets the priorities of the industries, with support required by both its members and by the government (Chisoro and Roberts, 2023).

As such, the observed differences in export performance between citrus and wine ultimately boil down to the quality of decision making in terms of the nature of activities and initiatives that the industries used the resources to invest in, and how they implemented the activities and initiatives, rather than the quantity of levies. It appears that the success of the citrus industry largely comes from the historical decisions of the organisation to invest in long term research and technical capabilities, which laid the basis for the industry to establish commercial companies to supply key inputs to member firms; and its close engagements with government.

5.3 Investments in collective goods and services

A key difference between the citrus and wine industries lies in their decisions and approach to investments in collective industry goods and services. A key factor to the citrus industry's success lies in the industry's decision to prioritise research and technology development as a shared or collective industry good and service. Research and development is a core role of the industry association undertaken through its Citrus Research International (CRI) arm (Interview 6). While

both citrus and wine industries' main function is market access, the citrus industry decided to place research and development at the centre of the industry to ensure market access, directing approximately 60% of total levy expenditure on research (Interview 6, Figure 5). This has been combined with a medium- to long-term view adopted by growers given the time it takes for research developments to feed through to production, and for market access to be negotiated (Chisoro-Dube and Roberts, 2021).

Market access in citrus requires research to ensure production that complies with food safety and phytosanitary requirements, and growing customer demands in different export markets.[6] This has informed the CGA's approach to invest in research and the provision of technical support. Through its research and technical services, the CGA enhances the industry's access to world markets and keeps abreast of all changes in sanitary and phytosanitary standards, thus protecting the industry (Cramer and Chisoro-Dube, 2021). For example, since the EU first declared the False Codling Moth a quarantine pest in 2018, South Africa put in place extensive measures in line to meet the phytosanitary regulations. Its integrated pest management systems approach has meant significant investments in research and "learning by doing" to get the system right with evidence of success (Roberts, Andreoni and Chisoro, 2022; Interviews 6, 9). As such, CGA's ability to adequately address issues around technical and sanitary and phytosanitary considerations in fresh fruit trade has determined its high level of access to the world markets.

One of the major reasons the citrus industry has been successful is that it conducts its own in-house research through the industry's research structures, as well as collaborative research with local and international institutions (Interviews 6, 9). Unlike other agricultural industries that outsource their research to university and government research institutions, the citrus industry recruits and develops its own skilled researchers, scientists, and technical professionals that undertake research internally through its CRI arm (Interview 6). These professionals conduct research that is primarily of an applied nature focusing on various issues including disease and integrated pest management, and biosecurity. Industry research on diseases and integrated pest management has largely focused on False Coddling Moth, Citrus Black Spot, and fruit flies, which have presented key market-access challenges for the industry. This has provided the basis for long-term upgrading through addressing key value chain issues in phytosanitary requirements.

A very strong in-house research and technical capacity gives the CGA the ability to respond more quickly and independently to the demands of importing countries and concerns about possible pests and diseases that could block exports, compared to other industries that outsource theirs to government research institutions (Chisoro and Roberts, 2023). For example, the Agricultural Research Council (ARC), a government research facility has been experiencing a number of challenges including unfilled posts, poor management, and a lack of capacity (Chisoro-Dube and Roberts, 2021; Interview 8).

[6] www.cga.co.za

The emphasis on research in the citrus industry has been linked to innovation and entrepreneurial capabilities for shared upgrading services. The CGA leveraging its non-profit research and technical capabilities provided patient capital or strategic funds to establish commercial for-profit companies that develop, manufacture, and supply key inputs in crop protection solutions and cultivars to growers. River Bioscience Xsit supplies crop protection solutions and services, and the CGA Cultivar Company (CGACC) supplies cultivars to growers. These are companies that take time to generate an income stream. For example, CGACC's funding was in terms of a loan that must be paid back to the CGA over an extended period. Given the lengthy pipeline it takes for a variety to come onto the market (about 10 years), the company required a 10-year plan (Interview 6, 9). This is the point at which the company would start to have an income stream. When CGACC started, they did not have any products and had limited human resources. However, the company slowly built up its product profile and now has a team of four people working in the company in 2022. For many years since inception in 2011, the CGACC did not have an income stream until recently. With the CGACC earning an income, the company is slowly making progress on repaying the loan although it will take a long time (Interview 6, 9).

Through these innovations, the industry is able to comply with phytosanitary requirements and respond better to the demands and preferences in export markets (Chisoro-Dube and Roberts, 2021). When the industry encounters a disease or pest that might become a blockage or trade barrier to exports, the citrus industry quickly responds by actioning its research to develop a solution or treatment that can assist farmers in meeting phytosanitary requirements (Interviews 6, 9). For example, leveraging CRI's research on diseases and integrated pest management, the citrus industry through its crop protection solutions company, River BioScience, actioned its research to develop a crop protection product called Cryptogran. Cryptogran was specifically developed because of the industry foreseeing how False Coddling Moth was going to become an issue to access markets (Interview 6). Such kinds of innovations are based on non-profit research base which has become the foundation for commercialised innovations. Through the CGA's research and development ecosystem, it is playing a central role in meeting and maintaining the necessary sanitary and phyto-sanitary standards and requirements for exports and in responding to concerns about possible pests and diseases that could block exports (Chisoro and Roberts, 2023).

Through its entrepreneurial capabilities, the CGA has also been able to shape markets by providing greater competition to the existing major suppliers of key inputs. For example, the CGA's work in cultivars has counteracted the high levels of concentration in private supply. South Africa has few substantial citrus cultivar companies owning the majority of the intellectual property rights on protected cultivars (Chisoro and Roberts, 2023). These companies impose various costs, controls and restrictions on growers to access protected cultivars (Chisoro-Dube and Roberts, 2021). They have a stronghold in the industry on protected cultivars, which the CGA has counter-balanced to an extent through its cultivar company, the CGACC. Unlike private cultivar companies, which profit-maximise from the management of varieties, the CGACC introduced a different self-sustaining model which negotiates reasonable terms for growers while ensuring a competitive

return to the cultivar owner (Interview 9). Similarly, the CGA's work in plant protection solutions has ensured more competitive markets given high levels of global concentration. The manufacturers of crop protection solutions own the registrations to crop chemicals (Interview 7) and can charge high prices to growers (Interview 6). The CGA through its crop protection inputs company, River Bioscience Xsit, develops and supplies rival treatment products to those supplied by global companies (Interview 6, 9).

Through these initiatives, the CGA ensures competitive rivalry to bring somewhat cheaper inputs to the growers. At the core of these developments is the role of research and development, which has laid the basis for development of cultivars and crop protection products in the commercial operations. The CGA has been able to link the bottom of the chain to the top of the chain from improved cultivars to investing in systems to ensure compliance with standards for access to export markets.

By comparison, the wine industry has not had a similar impact in these areas. Like the citrus industry, the wine industry's statutory levy funds market access, research and development, and knowledge and information development. In terms of its approach to market access, the wine industry decided to invest directly into market development and export promotions through short-term measures such as attendance at trade fairs. The industry directs the bulk of its statutory levies, 34% of total levy expenditure to export promotion and only 18% to research (Figure 5). The research and development levy funds research and development, innovation, training and knowledge transfer. Research activities focus on viticulture (plant improvement, plant biotechnology, cultivation, soil science and plant protection) and oenology (production technology, bottling, packaging and distribution, brandy and distilling) (Winetech, nd). Although industry research seeks to address the industry's challenges to be competitive through developing and adopting new technology, the industry remains stuck in low value bulk wine exports struggling to upgrade its image for over the past 15 years (das Nair, Chisoro and Ponte, 2023). Unlike in citrus, research funding in wine has not meant the industry organization directly creating dynamic efficiencies for producers and upgrading in the product mix.

The wine industry has not built internal institutional capabilities linked to management and investment of the levy funds to nearly the same extent as citrus has. The industry has instead been more of a vehicle for marketing and promotional activity, alongside information provision and training. While this ensues accountability and direction of funding, it is not the same as building deep collective knowledge which is deployed through the industry bodies for upgrading.

Globally, the South African wine industry has also been impacted by decarbonization requirements in the main European markets, which are expected to implement Carbon Border Adjustment Measures (CBAM) in the near future (Bell, Goga, Muzyamba, Nyamwena and Avenyo, 2023). This entails decreasing the use of fertilizer, electricity, fuel, and agro-chemicals. Wine buyers and retailers in the EU particularly the alcohol monopolies of the Nordic countries (Sweden, Finland, Norway), some Canadian states (Quebec, Ontario) and other UK retailers are imposing a range of

environmental standards on water and energy consumption, lighter glass bottles and recyclable or 'greener' forms of packaging for lower carbon footprint (Interview 17; Ponte, das Nair and Chisoro, 2023; das Nair, Chisoro and Ponte, 2023). These are fast becoming minimum requirements to access and maintain key export markets (Alford, das Nair, Visser, Ponte and Chisoro, *forthcoming*).

Although the industry is responding to these changes by putting in place initiatives to generate calculations of carbon emissions along the chain, producers still have a limited understanding of the importance of carbon footprint and there has been no domestic regulatory push to date to decarbonize in these value chains (das Nair, Chisoro and Ponte, 2023). Efforts to measure and contain carbon emissions are still tentative. As of 2022, only 39 cellars and 17 farms had completed the carbon footprint exercise, and this is even more difficult for smaller farms without the administrative staff to take care of these issues (Ponte, das Nair and Chisoro, 2023; das Nair, Chisoro and Ponte, 2023). On the other hand, these developments are happening in a context where retailers are not willing to pay appropriate premiums to cover certification costs (Interviews 10, 12, 13, 16). This adds to the downward pressure on wine purchase prices working against the industry's premiumisation strategy (Ponte, das Nair and Chisoro, 2023; das Nair, Chisoro and Ponte, 2023).

5.4 Relationship and engagements with the government

An important part of the differences in upgrading is also due to the industries' relationship and engagements with the government. Given the export-oriented nature of the two industries, the government plays a crucial role in export-related issues such as market access, tariffs, and trade barriers. These are government-to-government negotiations, with the industry bodies representing local players and providing technical support to government delegates (Interview 6).

The CGA works with different government departments on various industry-related issues. For example, the CGA working closely with government on market access issues, opened up new markets in China alongside other Asian countries where most of the future growth is likely to come from (Interview 6). Gaining access into markets such as China takes a long time (of up to 18 years), and trade negotiations can be protracted. Protocols for citrus were only approved in 2004 (Cramer and Chisoro-Dube, 2021) and to date citrus accounts for 85% of the total value of fruit exports from South Africa to China and Hong Kong. The share in value of South Africa's citrus exports to China and Hong Kong has shown substantial growth, from 4% in 2004 to 9% in 2023 (TradeMap, 2024).

Closely related is the CGA's work with the Department of Agriculture, Land Reform and Rural Development (DALRRD) on digital data-sharing systems for issuing export phytosanitary certification to improve compliance by producers in the value chain (Chisoro-Dube and Roberts, 2021). Phytclean digitizes the recording of information and ensures that there is consistency in information for different export markets. This has improved the processes of capturing, storing and reporting data for compliance with phytosanitary standards in different export markets (Cramer

and Chisoro-Dube, 2021; Chisoro and Roberts, 2023). Furthermore, the CGA through its subsidiary company, the CGACC, worked with DALRRD to improve the delays at the national plant quarantine facility and to reduce the time for imported new cultivars and plant material to pass through the quarantine for supply to nurseries (Interview 9). Delays in rolling-out imported and new varieties undermine the citrus industry's competitiveness with its southern hemisphere competitors such as Peru and Chile, which are releasing new cultivars earlier into the market (Interviews 3, 4, 5, 6, 9).

Lastly, the logistics side of the export business involves very close coordination with the government. Malfunctioning and inefficient ports continue to pose one of the biggest challenges for export industries especially fruit, given its perishable nature (Interviews 6, 9). The high levels of congestion and delays at South Africa's main ports increase costs for producers and negatively impacts on the competitiveness of South African citrus exports (Chisoro, das Nair, Muzyamba and Nontenja, 2024). The citrus industry working with other fruit and export industries and bodies that are higher up the scale, helps to bring pressure for government to improve efficiency of the ports and to ensure that systems are in place for logistics at the ports (Interview 6, 9).

Most of the citrus industry's efforts have materialised due to the stability in the CGA leadership, selected and supported to further the interests of the growers. The CGA leadership has developed close links and good working relations across government and with higher level ministerial government officials. This has supported most industry developments requiring state action (Interview 9). Growers acknowledge the important role played by the CGA and have made the following remarks: "*The CGA is a well-functioning entity, they take care of all issues with government"* (Interview 2). "*The CGA plays a pivotal role … and do very well to protect and promote the citrus industry both locally and abroad*…." (Interview 1). "*The industry engages with the Department of Public Enterprises which houses Transnet – this is a big worry for the industry. The ports are not running efficiently, and the industry has engaged with Minister Gordhan and Transnet's top management. The CGA has also engaged with the minister of Department of Trade, Industry and Competition"* (Interview 6).

The wine industry, on the other hand, has had less successful engagements with government citing the lack of support from government in comparison to other wine producing countries. This was evident in the alcohol bans that government instituted during Covid-19. The industry cites a lack of understanding on the part of government with respect to the difference between operating a wine business from a liquor business. During the first week of hard lockdown, which coincided with the wine industry's harvest season, the wine industry was not allowed to harvest for a full week, yet other agricultural sectors could continue harvesting (das Nair, Chisoro and Ponte, 2023).

The industry also points out the need for better cooperation between industry and government. This is particularly in relation to government assistance in drawing better bilateral trade agreements for improved market access (das Nair, Chisoro and Ponte, 2023). The wine industry has not had much success in opening up new markets and gaining traction in new markets. While

there are pockets of success, the industry has not generated overall impact. Furthermore, the poor record on social transformation given the highly skewed patterns of ownership by historically disadvantaged persons, legacies of racialised inequalities, and a tainted history of poor worker conditions on wine grape farms and cellars has soured the state-business relations (das Nair, Chisoro and Ponte, 2023; Alford, Visser and Barrientos, 2021; Howson, 2022; Finnwatch, 2023).

6. Conclusion

The comparative experience of citrus and wine in South Africa demonstrates the importance of collective investments for upgrading in global value chains. In turn, upgrading requires value chain interventions which address the obstacles to improved export performance, i.e., a higher value product mix and market access. The obstacles include standards and requirements imposed in export markets, the power of firms who provide critical inputs, and the power of buyers in key export markets.

The stand-out performance of South Africa's citrus industry is an export-led success story. The success has been built on linkages and long-term investments in capabilities and coordination to ensure upgrading. Upgrading has taken a variety of ways including compliance with standards and requirements in export markets and access to overseas export markets. The industry's export orientation provides a discipline to build and sustain dynamic comparative advantages through improved capabilities along the value chain. The performance has required investments in research and technical capacity covering a broad spectrum of activities including new and improved cultivars to meet changing international preferences, competitive plant treatment solutions to tackle pests and diseases for complying with phytosanitary requirements in key export markets, along with organisation of logistics and marketing. The industry association has built institutions and businesses for these different functions through entrepreneurial collective investments. It has also involved good alignment between government and the industry. The CGA has worked with the government to open-up new markets, establish the necessary rules and regulations that the industry must adhere to in order to meet standards, and to improve inclusion, although much more progress is required here.

The effective coordinating role of the CGA is due to the long-term focus on developing grower capabilities, oriented to upgrading for export success, with sustained investments in shared industry services, research and technical capacity. This in turn reflects the organization of the CGA as a representative of growers, which means it has balanced the power and influence of interests at other levels of the value chain.

By comparison, the South African wine industry has remained largely stuck in low value bulk wine export categories. While efforts have focused on market access, the industry organisation has not built the institutional capabilities or made the investments in collective industry goods and services necessary for the industry to grow into higher-value product segments and access more profitable

export markets. The potential for such a change is illustrated by successes in small niches such as sparkling wine.

Organizationally, the wine industry has been characterised by unstable and fragmented industry structures evidenced by the formation and dissolution of various industry bodies – all seeking to create a representative industry structure, that can provide the necessary leadership to successfully develop and implement a credible industry-wide strategy, capable of addressing industry challenges and objectives. Although the wine industry has had similar levels of resources as citrus in both relative and absolute terms, the generally weak collective understanding of what is required to build export success has resulted in the industry's failure to develop a forward-looking integrated focus that can address industry challenges for export success. The organisation has not made the longer-term investments required and has instead channeled funds to short-term support such as marketing and promotions in export markets rather than building the deep collective knowledge and learning required for upgrading.

The dual imperative of charting an inclusive recovery from Covid-19 while facing up to climate change means that coalitions to generate collective solutions and support long-term investments for African producers in GVCs are even more crucial than ever. Citrus shows what can be achieved in terms of building capabilities when stakeholders pull together, and industry bodies do not simply lobby for the short-term interests of their most powerful members. The CGA experience highlights the complex dynamics of change, learning and experimentation in the South African context which may assist other countries interested in exploring how high value agro-industries can be managed and developed in a way that relates to the long-term developmental challenges that they face.

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Appendix Table: List of cited interviews

New Reference	Classification	Date
Interview 1	Grower-packhouse	2020/03/23
Interview 2	Grower-packhouse	2020/07/20
Interview 3	Tree nursery	2020/08/19
Interview 4	Cultivar development & management	2020/10/14
Interview 5	Cultivar development & management	2020/12/02
Interview 6	Industry association	2021/03/17
Interview 7	Crop protection solutions industry association	2021/05/14
Interview 8	Government marketing institution	2021/11/19
Interview 9	Cultivar inputs supplier	2022/05/10
Interview 10	Producing wholesaler	2022/03/30
Interview 11	Wine writer and taster	2022/03/31
Interview 12	Producer cellar	2022/10/07
Interview 13	Producing wholesaler	2022/10/11
Interview 14	Private cellar	2022/10/26
Interview 15	Estate + Private cellar	2022/11/01
Interview 16	Producer cellar	2022/11/03
Interview 17	Buyer	2020/12/23