

# A SYSTEMATIC REVIEW OF THE GLOBAL AND SOUTH AFRICAN ORANGE INDUSTRY: COMPETITIVE CONDITIONS AND MARKET DYNAMICS



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## Abstract

This systematic review analyzes the global and South African orange industries, with a focus on their competitive landscape and market dynamics. Oranges, which were initially cultivated in the Himalayan foothills, have evolved into the most widely produced fruit globally, characterized by significant production and export volumes. Employing a systematic literature review methodology, this study consolidates findings from research conducted between 2000 and 2023, highlighting challenges such as disease outbreaks, climate change, market regulations, and the increasing significance of sustainability in consumer preferences. The analysis identifies North America, particularly the United States, as the leader in the global orange market, while the Asia Pacific region demonstrates a rising demand for orange juice. South Africa, which boasts a rich citrus heritage dating back to 1654, exports the majority of its orange production but confronts challenges related to compliance with international standards and intensifying global competition. The review assesses critical factors influencing the industry, including the utilization of natural resources, regulatory frameworks, and government support. The findings underscore the necessity for innovative strategies and sustainable practices to sustain competitiveness. The study concludes with practical recommendations for stakeholders, advocating for enhanced research and development, improved disease management, and diversification into value-added products to meet evolving market demands. This review offers valuable insights for policymakers, industry participants, and researchers seeking to promote resilience and growth within the orange sector.

## 1. Introduction

The orange industry, a significant segment of the global agricultural market, plays a vital role in food security, economic development, and trade across various regions. As one of the most widely consumed fruits worldwide, oranges are not only a valuable source of nutrition but also a critical driver of employment and income for millions of people, particularly in developing countries. This systematic review aims to provide a

comprehensive analysis of the competitive conditions and market dynamics that shape the orange industry on a global scale, with a specific focus on South Africa as a key player in the international market. In recent years, the orange industry has experienced substantial transformations driven by factors such as climate change, shifts in consumer preferences, technological advancements, and evolving trade policies. These changes have created both opportunities and challenges for producers,

exporters, and consumers alike. Therefore, understanding the competitive landscape and market dynamics is essential for stakeholders wishing to navigate this complex environment effectively. South Africa, as one of the leading exporters of oranges, has a unique position in the global market. The country's diverse climatic conditions, coupled with its well-established agricultural practices, enable it to produce high-quality citrus fruits, which are highly sought after in international markets. However, the South African orange industry faces challenges, including competition from other citrus-producing countries, regulatory changes, and the impacts of global economic fluctuations. This systematic review consolidates existing literature and empirical studies related to the orange industry, examining competitive conditions, market trends, and the specific dynamics affecting both the global market and the South African context. By synthesizing findings from various studies, this review aims to provide valuable insights for policy-makers, industry stakeholders, and researchers, facilitating informed decision-making and strategic planning in the orange sector. Through this structured approach, we intend to highlight not only the current state of the orange industry but also identify gaps in the literature and areas for future research. By doing so, we aspire to contribute to a more comprehensive understanding of the factors influencing the orange market and promote sustainable practices that enhance the competitiveness and resilience of the industry in South Africa and beyond.

## 2. Scope of the Study

### *Aim of the study*

This review aims to provide a thorough understanding of the factors influencing the orange industry at both global and local levels. Specifically, this study seeks to:

### *The objectives of this study were to:*

Comprehensively analyze and synthesize the competitive conditions and market dynamics of the global and South African orange industry. By examining existing literature, industry reports, and market data.

## 3. Research Methodology

The study focuses on a comprehensive analysis of existing literature and provides insights into the factors influencing the industry and recommendations for stakeholders. This systematic review follows established guidelines for literature reviews, encompassing peer-reviewed journals, government reports, and industry publications. The databases searched include Google Scholar, Quantec Easy Data, and journal articles focusing on articles published from 2000 to 2023 were systematically searched using specific keywords related to the orange industry, ensuring coverage of both global and South African contexts. The

criteria for inclusion involved relevance to the orange industry, empirical studies, and comprehensive market analyses. Data extraction was conducted using a standardized form to collate essential information from each selected study, including authorship, publication year, geographical focus, research methodologies employed, key findings, and limitations. This process facilitated the systematic organization of studies into thematic categories that highlight various sides of the orange industry. A qualitative synthesis was performed to identify prevailing trends, challenges, and opportunities within the industry, enabling comparisons between the global context and the specific circumstances of South Africa, characterized by its unique climatic conditions and market structures. The review also evaluated the quality and rigor of the included studies using established assessment tools tailored for this type of research. To ensure the reliability and validity of the findings, two independent reviewers evaluated the studies for inclusion, resolving discrepancies through discussion and consensus. The synthesis of data allowed for the identification of gaps in the existing literature, highlighting areas that require further investigation. Additionally, the review incorporated a critical analysis of socio-economic and environmental factors influencing the orange industry, particularly focusing on sustainability practices and their implications for future development within both a global and South African context. The outcome of this systematic review aims to provide stakeholders—including policymakers, researchers, and industry practitioners—with a comprehensive understanding of the current state and prospects of the orange industry, emphasizing the need for sustainable practices and adaptive strategies in an evolving market environment.

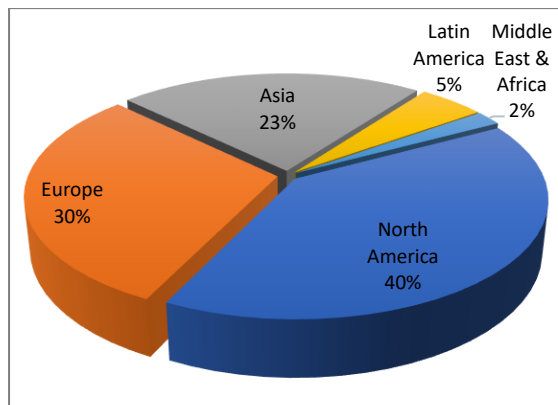
## 4. Overview of the Global Orange Industry

The orange market encompasses a wide range of products, including fresh fruit, juices, concentrates, and extracts, catering to diverse consumer preferences and culinary applications. With a global supply chain spanning across continents, oranges are cultivated in various climatic regions, each contributing unique flavours and characteristics to the market. However, the orange market is not without its challenges, including the threat of disease outbreaks, weather-related risks, and market volatility. Despite these challenges, the orange market continues to evolve, driven by innovation, sustainability initiatives, and changing consumer trends.

### 4.1. Regional Analysis of the Orange Market

In 2024, North America led the global orange market with approximately 40% revenue share, driven by favourable cultivation conditions, advanced practices, and strong consumer demand, particularly in the U.S. with its extensive citrus groves. Asia Pacific is experiencing growth in the juice category due to a shift towards healthier beverage options, while Europe holds over

30% of the market, primarily in sweet oranges due to their versatility and nutritional value. Latin America represents over 5% of global revenue in the orange sector, with a projected CAGR of 4.2% from 2024 to 2031, heavily influenced by the popularity of orange juice. The Middle East and Africa, contributing around 2% of global revenue, are expected to grow at a CAGR of 4.5% during the same period. Supermarkets play a crucial role in the distribution and retail of oranges and related products, serving as key providers for consumer needs. (Cognitive Market Research, 2024).



**Figure 1.1.** Global Orange market share  
Source: USDA (2024)

## 4.2. Market Restraints of the Orange Market

### Crop Yields and Supply Chain Efficiency to Increase the Demand Globally

Maximizing crop yields and improving supply chain efficiency are crucial for driving global demand for oranges. Enhanced agricultural practices, such as modern irrigation methods, effective soil management, and pest control strategies, can increase yields and maintain a steady supply. Furthermore, investing in research and development to create disease-resistant varieties and optimize growing conditions can significantly boost productivity. In conjunction with production increases, refining the supply chain through investments in transportation infrastructure, cold storage facilities, and logistics management can reduce post-harvest losses and ensure that fresh oranges efficiently reach the market. By addressing challenges in both production and distribution, stakeholders can satisfy the rising global demand for oranges, take advantage of emerging market prospects, and promote the long-term sustainability of the orange industry.

#### 4.2.1 Health and Wellness Trends to Propel Market Growth

The emerging health and wellness trends are set to significantly boost the global oranges market. With an increasing emphasis on

nutritious and natural food options, oranges stand out as a key choice due to their high vitamin C content, antioxidants, and dietary fiber. Consumers are leaning towards oranges and orange-based products as they strive to adopt healthier lifestyles and address lifestyle-related health issues. Growing awareness of the health benefits linked to orange consumption, such as immune support, skin health, and overall wellness, is driving demand across various demographic groups. Additionally, the versatility of oranges in a range of culinary uses, from juices and snacks to cooking ingredients, makes them even more attractive to health-conscious consumers. As these trends continue to grow, the oranges market is set for significant expansion, offering opportunities for innovation, product diversification, and market growth to align with changing consumer preferences and maintain strong demand.

#### 4.2.2 Disease and Pest Outbreaks to Limit the Sales

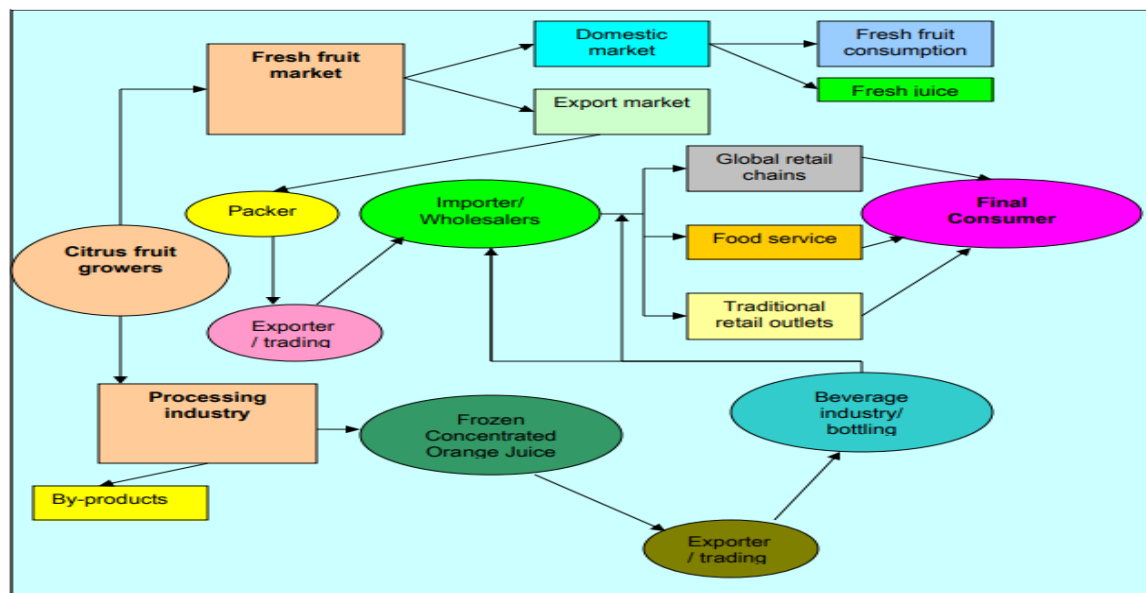
The persistent threat of disease and pest outbreaks poses a significant challenge to the sales and profitability of the orange market. Diseases such as citrus greening (Huanglongbing) and pests like the Asian citrus psyllid have been major concerns for orange growers, leading to significant yield losses and quality deterioration. These outbreaks not only reduce the quantity of oranges available for sale but also diminish their marketability due to concerns about fruit quality and safety. Additionally, efforts to control diseases and pests often require substantial investments in preventive measures, such as orchard management practices and chemical treatments, further increasing production costs for growers. The unpredictability and persistence of these outbreaks underscore the need for ongoing research and development to develop resilient varieties and sustainable pest management strategies. Addressing these challenges is essential to mitigate risks, safeguard sales, and ensure the long-term viability of the orange market amidst the threat of disease and pest pressures.

## 5. South Africa's orange industry

Orange marketing value chain analysis has been reduced due to the omission of several linkages and the impossibility of depicting the size, degree of control, significance of each link, and flow in a single diagram. (DALRRD, 2020). Within the orange value chain, the fruit harvested can be sold fresh in markets or freshly squeezed and consumed as juice at home (Begum et al., 2016). Alternatively, the fruit can be processed to produce other by-products and juice, primarily in the form of frozen concentrated orange juice (FCOJ), which is useful for international trade. In the context of globalization, there is growing competition in this industry, along with reorganizations and modifications to the marketing chain. The customer is increasingly driving the market. (Ndou, 2012). The value chain network involved in the

commercial production of fresh oranges, including packaging and marketing, is evolving into a more complex and specialized network of service providers. Different value chain components may be merged, depending on the fruit's market outlet and operational scale. Small-scale growers could, for example, package and sell their oranges (FAO, 2017). Value-added

activities, which include services such as packaging, shipping, and cold storage, take place at various points in the value chain. The primary segments of the orange value chain, consumers, processing, domestic, export markets, and international retail chains, are the key topics of discussion. **Figure 1.2** shows the orange value chain. (Dube & Roberts, 2021).



**Figure 1.2.** South African orange value chain.

Source: DALRRD (2020)

### 5.1 Domestic and export markets

In South Africa, growers represent about one-third of orange farms, with commercial export-oriented farms driving international production. (DALRRD, Trends in the agricultural sector, 2022). Oranges intended for the fresh market are graded and packed at advanced packing houses, which vary in size and ownership. Following a 1997 deregulation (Dube & Roberts, 2021), larger farms began establishing private packing facilities to maximize profits. Some smaller packing houses process deciduous fruits to manage costs effectively. After packing, oranges are distributed to retailers, while lower-grade fruits are sent to processing plants for juice extraction. The citrus industry relies on inputs such as fertilizers and packaging, utilizing labor from local farms and towns. (Hodges, Philippakos, Mulkey, Spreen, & Muraro, 2001). The export market is crucial, accounting for 61% of production, compared to 19% for domestic

consumption and 18% for processing. (CGA, 2023). Oranges are primarily sold through three export channels: directly to importers, in bulk via contracts, or through cooperative export organizations that manage promotions and logistics. Export organizations handle washing, sorting, and packaging and often negotiate transportation deals. Agents connect producers with buyers, charging a commission, while importers manage customs and distribution, typically earning a profit margin of 5% to 10%. The trend is shifting towards more long-term contracts with wholesale grocers, influenced by evolving standards and continuous fruit availability. In 2021, South Africa produced around 1.17 million tons of oranges, with 70% exported, and 25% processed, leaving only 6% for local fresh sales.

**Table 1. 1.** South African orange market segment distribution

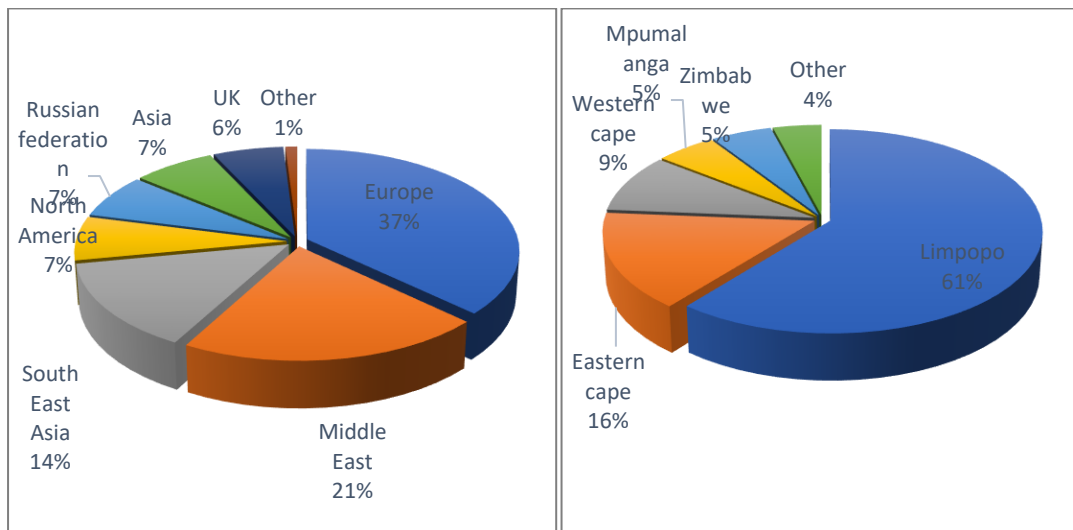
Year	Production	Local market	Processed market	Export market
2012	1 466 059	128636	300468	1036955
2013	1 658 827	127644	421474	1109709
2014	1 676 799	119950	439590	1117259
2015	1 647 361	114934	402088	1130339
2016	125184	88999	195436	990749
2017	1363576	87731	190354	1085491

2018	1585796	100269	317164	1168363
2019	1590463	94462	477514	1018487
2020	1413989	83098	217777	1113114
2021	1511056	94768	243220	1173068
2022	1787735	116151	404320	1150838

Source: CGA (2023)

There are two categories of juice processors: bulk processors, which generate the majority of the world's orange juice, and marketing processors, who sell packaged juice under their brand and frequently source extra juice from bulk processors. The beverage industry purchases juice concentrate, which they then dilute with water, package, and market. Many of these bottling companies have experienced mergers and acquisitions, such as Coca-Cola's acquisition of Minute Maid and Pepsi-Cola's purchase of Tropicana. (TetraPak, 2001). The European Union and the Middle East are South Africa's largest importers. In 2022,

the EU represented 37% of South African orange exports, with the Middle East accounting for 21% and Southeast Asia, and others accounting for 14% and 7%, respectively. **Figure 1.3** (right) shows the orange manufacturing area. Most oranges (61%) (16 857 acres) were planted in the Limpopo Province in 2022. Limpopo was followed by the Eastern Cape province (16%) and the Western Cape province (9%). Mpumalanga and Zimbabwe were also significant orange growers in 2022, accounting for 5% and 5% of total production, respectively.



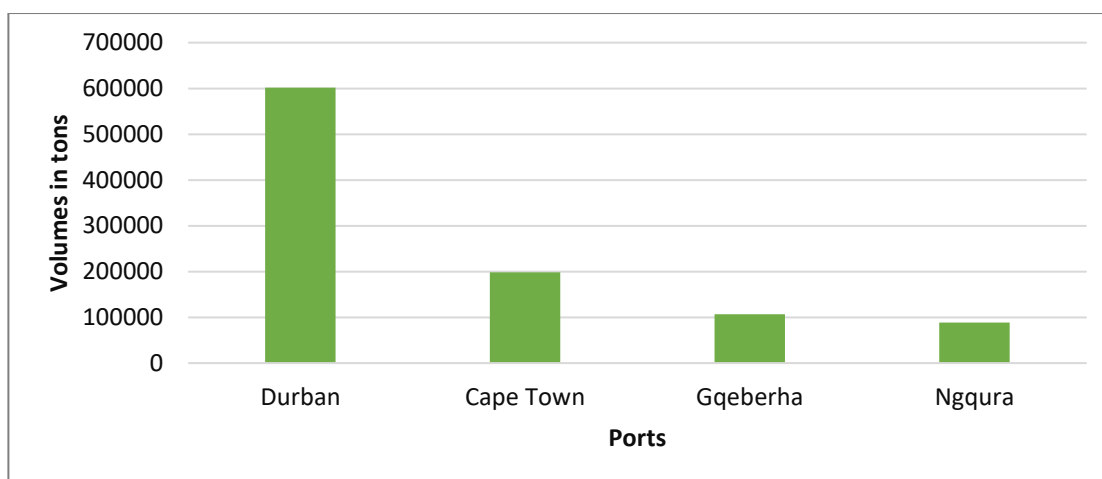
**Figure 1.3.** Local provincial production areas and major market destinations

Source: Citrus Growers Association (2023).

### 5.1.1 Loading ports of Orange in Southern Africa

Citrus fruits from South Africa are largely targeted for export markets and are shipped via the ports of Durban and Port Elizabeth from South Africa or Maputo in Mozambique. Durban accounts for more than 60% of citrus exports. Citrus, intended for the Middle East, South Africa's fastest expanding market, is delivered through the port of Port Elizabeth. Maputo's port is close to the country's expanding northeast region and might serve as an important gateway to the Middle Eastern and Asian markets. The Maputo port is undergoing substantial improvements on its

quay walls, quay surface, and roadways. (USDA, 2023). **Figure 1.4** highlights the volumes of oranges that passed through the various ports in South Africa. The upgrades to the Maputo port are seen as a great boost for orange exports that will be destined for Asian markets in the future. Currently, Durban is ranked as the main port that allowed approximately 600,000 tons of oranges in 2022. This is followed by the Cape Town port, which absorbed 198,173 tons, followed by Gqeberha (106,915 tons) and Ngqura (88,554 ), respectively.



**Figure 1.4.** Loading ports of oranges in Southern Africa

Source: CGA (2022)

### 5.1.2 Orange Historical Market Price Trends

The **historical** market price trends represent a significant aspect of agricultural economics, reflecting the interplay of supply and demand dynamics, seasonal variations, and external factors. **Table 1.2** shows the orange prices in the local, export, and processed markets in rand per tonne throughout the review period. It should be noted that the orange export industry yields greater returns in markets worldwide. In the export markets, the

price per tonne in 2022 was R9 625. This was R636 lower than the export price for 2021. Orange prices rose dramatically from 2012 to 2020 but only fell in 2021. In 2021, oranges sold in local markets fetched an average price of R3 305 per tonne, while those consumed by the processing sector fetched the lowest price of R617 per tonne.

**Table 1.2.** South Africa's historical market price and average prices

Year Feb - Jan	Sales to markets. R/Ton	Processed on markets. R/Ton	Exports on markets. R/Ton	Gross value (R'000)
2012	1895	564	4318	R5236834
2013	2054	591	4975	R6244319
2014	2235	619	5799	R7231367
2015	2545	654	6628	R8279056
2016	3635	1002	8570	R9272569
2017	3605	1072	8668	R10186105
2018	3361	693	8600	R10874828
2019	3643	699	8268	R9375877
2020	4897	519	10329	R12348975
2021	3999	639	8989	R11383360
2022	3305	617	9625	R12035163

Source: CGA (2022)

### 5.1.3 Final Consumers

The final consumers of oranges represent a crucial segment in the orange supply chain, influencing market dynamics and competitive conditions within the South African orange industry. In South Africa, the consumption of oranges is influenced by health trends, but there are unique local factors that shape consumer behaviour. Consumer preferences are undergoing significant transformation, with an increasing emphasis on

natural and nutritious products. There is a heightened awareness among consumers regarding the health and nutritional advantages associated with the consumption of fresh fruits and fruit juices. Additionally, nutritional considerations, particularly the reduction of fat and sugar intake, are influencing consumer behaviour and encouraging higher fruit consumption. Concerns about food safety have also escalated, particularly in light of recent food scandals in Europe, leading consumers to prioritize

high-quality food that meets their expectations for taste, appearance, and texture (Vinícius, 2021). Oranges are staple fruit in many South African households, valued for their affordability, and availability. Cultural factors also play a significant role in shaping consumer preferences in South Africa. Traditional practices, such as the use of oranges in festive and communal meals, continue to influence buying patterns (Vinícius, 2021). Moreover, consumers are seeking transparency in their food choices and desire comprehensive labeling, as well as initiatives focused on tracking and traceability. There is a notable interest in innovation, characterized by a growing preference for product diversity and an ongoing demand for new offerings. Simultaneously, evolving lifestyles have shifted consumer preferences towards convenience, making easy access to food a critical factor in produce demand. This trend has spurred an increase in the consumption of juices and easy-to-peel fruits, such as clementines. Furthermore, consumers are becoming increasingly conscious of production conditions, encompassing both environmental and social aspects, and are advocating for organic and fair-trade products.

## 6. Competitive conditions on orange production

In recent years, the competitive landscape of the global market for fresh oranges has changed dramatically. Several factors have contributed to the South African industry's increasingly competitive position with other major international competitors. The demand for fresh oranges has leveled off and switched to processed items in developed markets, while consumption in

developing countries is increasing as income increases. New competing suppliers have entered key global markets and are growing their market share, particularly in off-season markets. Many new market entrants are low-cost producers of high-quality oranges that compete directly with existing suppliers by taking advantage of seasonal niche opportunities. This chapter reviews the competitive conditions in the orange industry by comparing the strengths, weaknesses, and vital statistics of the fresh orange market industry to those of its main competitors. A comparison of South African and international industries by country is offered, along with relevant industry statistics. Next, a comparison of factors impacting South Africa and significant competitors is offered, including a summary table and commentary.

### 6.1 Industry comparison

Total output volume, area, and yields can be used as a starting point to evaluate an industry's strengths and weaknesses. Table 1.3 shows significant information such as the production area and yields of the fresh market orange sector in South Africa and its major competitor countries (Spain, Egypt, the United States, and the Netherlands). Spain, Egypt, and the USA produced more oranges than South Africa, which is mainly driven by the large total hectares dedicated to orange production (see Table 1.3). However, the volumes indicate that South Africa exports 80% of the oranges it produces. On the other hand, competitors are consuming large volumes of fresh or processed oranges in local

**Table 1.3.** Comparison of industries of selected countries

Product	Factor	SA	Spain	Egypt	USA	Netherlands
Oranges	Total hectares	35 884	143 170	129 862	199 391	0
	Production Volume	1 612 170	3 604 800	3 000 000	4 015 200	0
	Harvested Yield	449 270	251 785	231 014	201 373	0
	Exports	1 295 733	1 485 879	1 282 563	470 434	368 648
	Imports	3002	182 359	1.7	223 596	619 361

Source: FAO & compiled

### 6.2 Factors affecting the performance of the fresh market orange industry.

Several factors influence the performance of fresh orange businesses. Some factors, such as natural temperature, weather, and soil type, are ultimately beyond producers' control, but they can be controlled successfully and at varied costs. Government policies, such as environmental rules and trade policies, influence others (Bonarriva et al., 2006). Others may rely on the ability of individuals or groups of producers to increase yields and product

quality through changes in cultural practices or production scales, as well as cost control. An industry may be competitive domestically compared to imported products yet fail to meet international standards or phytosanitary criteria in global markets, resulting in a low export competitiveness ranking (Bonarriva et al., 2006). An assessment of competitiveness in any industry is difficult. Favourable conditions for any element or a collection of factors do not always result in improved relative performance or reduced associated costs. The section that follows provides an

assessment of each industry's performance utilizing important factors based on an examination of multiple data sources.

### 6.2.1 Regulations

Producers and exporters of oranges are required to comply with a comprehensive arrangement of regulations that encompass food safety, product quality, environmental stewardship, and social standards, including labor protections, workers' compensation, and land ownership. The necessity for regulatory compliance significantly influences both producer performance and operational costs. While some regulations are mandated by domestic or foreign governments, others are voluntary and shaped by market forces. The lack of available data complicates the assessment of the costs and benefits associated with the regulatory framework for orange producers in South Africa and other nations (Bonarriva et al., 2006). Meeting the phytosanitary requirements of various export markets presents a persistent challenge. For instance, issues such as citrus black spot (CBS) have resulted in stringent import conditions, particularly from the European Union, which in turn affect export volumes and revenue. Regulations are shaped by, among other factors, consumer demand for safer, higher-quality products, as well as concerns regarding social issues and environmental impact. Production must adhere to strict standards concerning packing and processing hygiene, which include sanitation and fumigation protocols, pesticide application and residue limitations, microbiological pathogen thresholds, classification criteria, packaging requirements, and labeling regulations. Additionally, the orange trade is subject to rigorous country-specific sanitary and phytosanitary (SPS) regulations designed to mitigate the spread of pests and diseases across regional, state, or national borders (Bonarriva et al., 2006). Regulatory bodies are increasingly focusing on the production processes of commodities such as fresh oranges, which are subjected to numerous human handling procedures aimed at enhancing food safety and traceability systems. Food safety regulations impact practices not only at the farm and packing levels—where potential contamination sources include fertilizers, irrigation water, harvesting equipment, and handling—but also throughout the distribution chain, where fluctuations in temperature and exposure to contaminants can compromise food safety (Bonarriva et al., 2006). While governments typically establish food quality and safety regulations, there is often pressure from retailers and consumers for even more stringent standards.

### 6.2.2 Market Standards

Customer-imposed standards that can surpass government requirements have evolved from the marketplace's desire for food safety and hygiene standards, which might range from permissible chemical residue levels on fruit to cleanliness in the

packing house. Even though they are optional, most countries have made satisfying standards a de facto requirement for doing business with retail or food service enterprises. In response, South African producers and the most forward-thinking producers in key competitor countries develop their food safety programs, which they then submit to third-party audits. Global GAP certification has been reported by leading producers worldwide. (UNCTAD, 2007). While most orange businesses that export globally generally meet quality standards in major export markets, only a small part of the Chinese and Mexican orange sectors. According to industry observers, China's main barrier to competing in the global market is its inability to meet food safety and hygiene standards in major destination markets. (UNCTAD, 2012)

### 6.2.3 Natural Resource Endowments

Climate change represents a substantial threat to citrus production in South Africa, characterized by unpredictable weather patterns, droughts, and rising temperatures, all of which can negatively impact crop yields and quality. Additionally, natural resources such as water availability, soil quality, climatic conditions, and the prevalence of harmful pests and diseases dictate the extent to which growers must manage their orchards. Practices such as irrigation, fertilization, pest control, frost protection, and the installation of windbreaks contribute to increased costs that many producers deem essential for maintaining competitiveness. In general, all major citrus-producing nations benefit from favourable climatic conditions for orange cultivation, and most enterprises adhere to "best practices" in orchard management (Skendžić et al., 2021). The existence of specific pests and diseases can not only diminish the marketable yield annually but also lead to import restrictions in foreign markets, ultimately reducing the productive area over time. While bilateral agreements may facilitate the continuation of the orange trade, particular handling and treatment requirements can extend shipping durations and elevate costs. Furthermore, government inspections can be costly for packers, sometimes accounting for up to 50% of the total packing expenses. Phytosanitary issues related to fruit fly infestations impose significant limitations on exports to key trading partners (TshikhudoI et al., 2021).

### 6.2.4 Seasonality

The ability to supply oranges during specific seasonal periods when global availability is reduced, thereby enabling producers to command higher prices, represents a significant strength for orange growers. This capability is considered one of the most critical competitive advantages for enterprises focused on export markets. The production cycles for fresh oranges are influenced by the contrasting seasons in the Northern and Southern Hemispheres, with the Northern Hemisphere typically producing



from September to March and the Southern Hemisphere from May to November. As a result, producers in the Southern Hemisphere can take advantage of the off-season in the Northern Hemisphere's high-demand markets, allowing them to maximize their profits (Bonarriva et al., 2006). To ensure a steady supply for consumers, it is ideal for farmers to cultivate oranges year-round. In regions where local production is limited, orange

growers in South Africa and other major competitor countries often plant various varieties with staggered maturation dates to effectively service international markets. Additionally, producers may choose to leave fruit on trees for extended periods, employing growth regulators to preserve fruit quality and utilizing cold storage techniques to manage supply and extend their marketing season (USDA, 2023).

**Table 1.4.** Orange marketing season by countries

Oranges	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec
South Africa												
Spain												
Egypt												
USA												
Netherlands												

Source: compiled

### 6.2.5 Government Support and Investment

South Africa, like many of its primary competitors, lacks substantial government support for its fresh orange industry. While agricultural extension services, soil conservation initiatives, and phytosanitary regulations designed to safeguard domestic agricultural products and consumers from harmful pests and diseases provide some indirect advantages to the South African orange sector, the overall support remains limited. The national agricultural department and private sector stakeholders engage in a levy system to fund research and development; however, many of South Africa's competitors receive minimal government assistance, primarily focused on phytosanitary measures, the collection, and dissemination of industry and market intelligence, as well as research initiatives. To enhance the country's international competitiveness, both national and local government entities are implementing government-supported technical assistance, strategic planning, and training programs. Nonetheless, China's national citrus strategy does not allocate financial resources, and the total official financial backing for orange cultivation is considered to be relatively modest, notwithstanding the potential for preferential policies at the local level (Koch & Terblanche, 2013). Conversely, the Spanish orange industry enjoys a range of government initiatives and funding mechanisms. Various support programs under the European Union's Common Agricultural Policy specifically target fruit production, which complicates the task of quantifying the level of assistance received by fresh orange producers in Spain. Nonetheless, there are dedicated programs for orange production that provide producers with direct compensation for market withdrawals, processing subsidies, and export refunds specifically tailored for citrus fruits. Additionally, support is available through the EU's rural development initiatives (OECD, 2021).

In summary, while South Africa's fresh orange sector operates with limited government assistance, comparative analysis reveals that other countries, such as Spain, benefit from more comprehensive support frameworks, which enhance their competitiveness in the global market.

## 7. Findings and Conclusion

The review of the global and South African orange industry highlights the significance of oranges as the most cultivated fruit worldwide, emphasizing their historical and current relevance. Despite being a leading exporter, particularly in South Africa, the industry faces numerous challenges, including disease outbreaks, adverse weather conditions, compliance with international regulations, and increased competition from other fruit commodities. The analysis reveals a shifting consumer focus towards health and sustainability, driving demand for fresh orange products and orange juice specifically. Although South Africa has a strategic position in the global market, with a substantial portion of its production earmarked for export, various competitive factors—including natural conditions, global market trends, and government support—play a critical role in shaping its market landscape. The review of the global and South African orange industry underscores several critical insights regarding production dynamics, market trends, and competitive conditions. Notably, North America, particularly the United States, dominates the global orange market, leveraging favourable climatic conditions and advanced agricultural practices. Meanwhile, the Asia Pacific region has shown a growing preference for orange juice, aligning with a broader trend toward health-conscious consumption. South Africa's orange production, steeped in over three centuries of history, primarily caters to export markets, with around 61% of its produce destined for international sales. Despite its established export orientation, the

South African orange industry faces significant challenges including disease outbreaks such as citrus greening, compliance with stringent international standards, and heightened competition from emerging global producers. The competitive landscape is further complicated by evolving consumer preferences that increasingly emphasize health and sustainability, pushing industry stakeholders to adapt practices and innovate to maintain relevance in the market.

## Future Directions

Looking ahead, the South African orange industry must prioritize strategic enhancements to address both existing challenges and shifting market demands. Key areas for future focus include the development and implementation of effective disease management strategies to combat the persistent threat of citrus greening and other pest-related issues that significantly impact production volumes and quality. Moreover, investment in research and development is essential to foster innovation, such as the creation of disease-resistant orange varieties and the adoption of sustainable agricultural practices. As consumer health trends continue to gain traction, the industry should capitalize on opportunities for diversification into value-added products, including organic and fair-trade options, which could meet market demand for ethically produced goods. Additionally, strengthening export logistics through improved infrastructure and enhanced supply chain management will be critical to overcoming current limitations, ensuring that high-quality fresh oranges reach global markets efficiently. In light of these potential advancements, collaboration between government bodies, industry stakeholders, and research institutions will be pivotal in shaping a resilient and competitive future for South Africa's orange industry.

## Research Directions

Future research in the orange industry should concentrate on several pivotal areas to enhance productivity and competitiveness. First, empirical studies focusing on the economic impacts of disease management strategies should be prioritized to understand their efficacy and cost implications for farmers. Additionally, exploring consumer behaviour and preferences will be crucial in guiding product development, marketing strategies, and sustainability initiatives. Investigating the role of advanced agricultural technologies, such as precision farming and automated pest control systems, can provide insights into improving yields while mitigating risks associated with climate variability and pest outbreaks. Moreover, comprehensive analyses of global market trends, including emerging competitors and changing trade dynamics, will enrich the understanding of South Africa's positioning within the international orange market. Evaluating the effectiveness of government policies and

incentives in supporting the citrus sector may identify best practices that could bolster industry resilience. Ultimately, a holistic approach combining agronomic, economic, and sociocultural research will be vital in driving sustainable growth within the orange industry.

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