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From Seed to the World: The Internationalization of Sugal

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Dissertation written under the supervision of Professor Ricardo Reis

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Abstract

Title – From Seed to the World: The Internationalization of Sugal
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The following dissertation chronicles the internationalization of Sugal, one of the biggest tomato processing companies in the world, and the factors that led to its continued growth and prosperity in the global market.

Using a case study format, the dissertation describes the current landscape of the tomato processing industry and situates Sugal in it, explaining how the company grew through a strong focus on structural investments and development of resources and capabilities, full integration of its production, efficiency maximization, gradual scaling and seizing of opportunities in the international market at the best time possible.

Additionally, we look towards the future of the industry and assess how shifting consumer patterns, emerging new markets and the potential weakening of the Chinese and Californian industries can impact Sugal. Also presented are the production forecasts for the countries where the company currently operates in and some new locations that offer great potential for a possible Sugal expansion down the line.

Resumo

Título – Da Semente para o Mundo: A Internacionalização da Sugal
Autor – Pedro Pires Polaco
Palavras-chave – Transformação de tomate; internacionalização; born global; integração vertical; eficiência; IDE

A presente dissertação descreve a internacionalização da Sugal, uma das maiores empresas de transformação de tomate do mundo, e os fatores que levaram ao seu contínuo crescimento e prosperidade no mercado global.

Utilizando o formato de caso de estudo, a dissertação apresenta o panorama atual da indústria de transformação de tomate e situa a Sugal no mesmo, explicando como a empresa cresceu através de um forte foco em investimentos estruturais e desenvolvimento de recursos e competências, integração total da sua produção, maximização da eficiência, gradual aumento de escala e aproveitamento de oportunidades no mercado internacional, no melhor momento possível.

Além disso, olhamos para o futuro da indústria e avaliamos como a mudança das tendências de consumo, os novos mercados emergentes e o potencial enfraquecimento das indústrias chinesa e californiana podem ter impacto na Sugal. Também são apresentadas as previsões de produção para os países onde a empresa opera atualmente e algumas novas localizações que oferecem grande potencial para uma possível expansão da Sugal no futuro.

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List of Abbreviations

B2B – Business to Business

B2C – Business to Consumer

CAGR – Compound Annual Growth Rate

CAP – Common Agricultural Policy

CAPEX – Capital Expenditure

EBITDA – Earnings before Interest, Taxes, Depreciation and Amortization

EEC – European Economic Community

EU – European Union

FDI – Foreign Direct Investment

FMCG – Fast-Moving Consumer Goods

GDP – Gross Domestic Product

$M – Million dollars

M€ – Million euros

MERCOSUR – Mercado Común del Sur (Common Market of the South, in English)

R&C – Resources & Capabilities

R&D – Research & Development

SMEs – Small and Medium Enterprises

UK – United Kingdom

USA – United States of America

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I. Introduction

Portugal's history has always been linked to the land and to its relationship with food. The country enjoys enviable natural conditions that make it the perfect place for the farming of many agricultural products that are coveted the world over.

One of those products is the tomato, the historically popular vegetable present across the globe which can be consumed in a variety of different ways. Portugal is the largest *per capita* producer of tomato and the industry around it is a key stalwart of its national economy.

This dissertation focuses on Sugal, the biggest tomato transformation company in Portugal, and its journey to becoming an important player in the global tomato processing industry, delineating how its expansion overseas came to be, the details of its internationalization strategy, as well as the sources of its advantage over competitors, the drivers that contributed to its accelerated growth in a plethora of different geographies and some potential opportunities and challenges that the firm might have to face in the future.

II. Methodology

To elaborate this dissertation, extensive data collection was performed from a variety of different sources with the main one being Sugal itself with complementary data being collected by the researcher from other reliable sources with relevant insights and/or data on the industry. In addition to that, several interviews and touchpoints were held with the company to delve further into certain topics that the data alone could not explain.

The paper is organized in three main sections: first, the Literature Review which breaks down some important theories and theoretical concepts which will provide the base for understanding the topics discussed in the second section, the Case Study, where we'll take a deep dive into Sugal and its internationalization efforts and analyze different factors that had a role on that expansion. Lastly, the Teaching Notes section serves as a pedagogically-oriented resource with some formulated questions (and suggested resolution) to test the students' understanding of the case and how well they can apply the theoretical concepts and prior strategic knowledge to this particular context.

III. Literature Review

1. Internationalization

Internationalization is a broad concept that does not have a set definition but, according to Welch and Luostarinen (1988), it consists of a process of expanding involvement in international operations which entails an increase and diversification of a company's offering to foreign markets. It can also be characterized as the result of the intent of a firm to strengthen its network stance and improve, or maintain, its current position in the market (Johanson and Vahlne, 2009).

In recent decades, companies are adopting a global view of their potential markets due to the dynamic and fast-changing nature of competitive environments (Andersson, Gabrielsson, and Wictor, 2004). It has become an essential part of the strategic backbone of firms to think beyond their national markets and venture outside to find new opportunities that can enhance the benefits that the company can accrue.

Many internal factors affect the propensity and degree of internationalization of each firm and how ready they are to venture into foreign markets such as the education level of the firm's employees, the investment in product innovation and advertisement and its size, which is important due to the greater availability of resources that the firm has (Olmos, 2011). There is an important distinction to be made regarding the export behavior of SMEs and large firms in that the former's decision to export is largely influenced by the main decisionmakers while for large ones that decision is determined more based on structural arrangements (Reid, 1981).

According to Aaby and Slater (1989), management is also a big part on whether and how a firm internationalizes, since the existence of a clear international vision combined with efficient management systems and established competencies will determine much of the firm's internationalization performance.

When it comes to the unfolding of the process of internationalization, it normally starts with companies using their initial domestic network as a platform to help them build networks abroad by gradually expanding their commitment and investment as they acquire greater

knowledge and experience in the foreign markets they operate in. These business relationships also have a big effect on the specific geographical market a firm chooses to internationalize to and on the mode of entry used (Johanson and Vahlne, 2009).

The performance of firms abroad seems to be less influenced by country and industry factors than by company-level factors, which include their resources and skills and the strategies used to deploy them (Grant, 1987).

2. Knowledge Creation

One of the most important processes happening inside a company to ensure continued growth and avoid stagnation is the process of knowledge creation which consists of a continued exchange between the knowledge of the producer and that of the user to create new insights that feed into and help develop all the activities in the business (Johanson and Vahlne, 2009).

With the rapid growth of the goods and factor markets, knowledge and competencies have gained a preponderant role in companies' portfolios. These intangible assets are less valuable in isolation than when they are combined with other assets of the firm and it's this coalescence that gives the company a competitive advantage over competitors (Teece, 1998).

In the process of internationalization, knowledge creation is a crucial element that can determine the success of the internationalization network as relationships between the different parties are based on the distribution of specific levels of knowledge, trust and commitment and how they choose to leverage them for each kind of opportunity (Johanson and Vahlne, 2009).

3. Vertical Integration

Vertical Integration can be described as the combination under a single ownership of two or more sequential stages of the value chain by concentrating the execution of certain activities in-house instead of outsourcing them. This diversification strategy is very reliant on finding and leveraging potential synergies between different business units and the firm's capabilities (Buzzell, 1983).

Usually, the biggest objective of vertical integration is to reduce the transaction costs that are incurred when dealing with numerous parties responsible for different stages of the process, but this strategy may also be employed to guarantee the supply of raw materials and avoid the high fixed costs that their shortage might bring to the firm. Furthermore, vertical integration can also generate an improvement in the coordination between production and inventory scheduling which can lead to increased innovation since the firm is more involved in the production and distribution of the product and is able to better realize opportunities of change (Buzzell, 1983).

Vertical integration is more efficient in stable industries, where there are high entry barriers, technological change rate is low and price-cutting behavior from competitors is extremely rare. In this type of environments, firms with greater resource availability and with a stronger market position are better suited to implement an efficient vertical integration strategy (Harrigan, 1986).

4. Sustained Competitive Advantage

Companies need to assert a competitive advantage to ensure they can carve their position in the market and guarantee long-term survival in the industry. Competitive advantage consists of a strategy that differs from other competitors in the market and allows the firm to gain value from its activity. Sustained competitive advantage has those same features, but it is also an advantage that other firms are unable to replicate and, thus, cannot reap the same benefits from (Barney, 1991).

The main source of sustained competitive advantage is the collection of valuable resources that a firm possesses. To gain that advantage, those resources must be rare and not easily obtainable by competitors since that inimitability is what keeps other firms from leveraging those resources, in which case the advantage would be lost for the leading firm.

Building upon that, we should also consider that the firm's network and interorganizational dimension are important sources of sustained competitive advantage, since they allow the company and its partners to profit from inter-firm synergies and generate relation-specific resources, as well as further develop complementary and innovative capabilities. This relational competitive advantage becomes difficult to imitate by competitors, and thus

sustained, due to the dynamic nature of these links, resource indivisibility and scarcity of partners with complementary R&C (Duschek, 2004).

5. Born Globals

With globalization expanding and evolving in the last couple of decades, a new concept has emerged in the literature which is called the "Born global firm".

Born globals are enterprises that set international expansion as a priority right from their inception by assembling and developing a series of knowledge-based resources and capabilities that can help them achieve a strong international position even if they lack the scale and other types of resources that larger firms have (Knight and Cavusgil, 2004).

This phenomenon has arisen due to two main conflating factors: first, the globalization of markets, which saw a large number of firms go beyond borders as buyers' preferences became homogeneous across the globe and activities simpler to perform in an international environment; secondly, due to the advancement in technology that facilitated not only the production process of firms, but also their communication and logistics activities through reduced transactional and operational costs (Knight and Cavusgil, 2004).

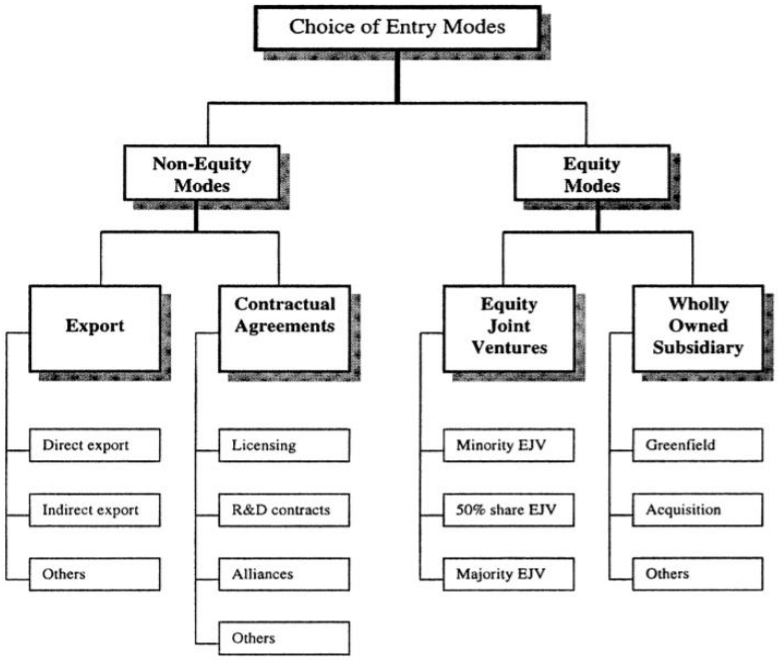
For born globals, their strong-willed leadership, integrated operation and a market strategy that is primarily focused on rapid expansion abroad are some of the reasons that precipitate them to an early internationalization endeavor. Through a network of both resource and learning accrual, the firm is able to generate rapid organic growth to sustain its shortcomings when compared to more experienced players. The born global, as opposed to the regular SME, deploys its resources before having a complete view of the market, expecting to achieve success based on the established industry dynamics and own growth (Gabrielsson, 2008).

6. Foreign Entry Modes

When talking about internationalization, it is crucial to understand the factors that influence how a firm decides to enter a certain market.

According to the hierarchical model proposed by Pan and David (2000), modes of entry can be divided into equity-based, which include wholly owned operations and equity joint ventures, and non-equity based, which include contractual agreements and export. The choice between them will depend on a number of different factors anchored on the firm's resources commitment, risk, return and control.

FIGURE 1 – Hierarchical Model of Choice of Entry Modes



Source: Pan and David (2000)

The determinant factors in choosing between the equity-based approach or the non-equity one include the location of operations, industry-specific factors, the contextual risks of the host country (i.e. political risk, ownership risk, transfer risk and operation risk), the degree of interaction between the host and home countries, risk orientation and power distance (where a high degree of inter-personal inequality and hierarchy exist).

Evidence shows that firms are keener on choosing open cities located in special economic zones for equity-based entry modes and they also prefer that method if they have high asset turnover and/or the industry where they compete in is advertising-intensive. In contrast, the bigger the contextual risk of the host country is, the less likely the firm is to venture into an equity-based approach and the same applies if the relationship between host and home countries is not on the best terms. Regarding risk orientation, firms that are located in a high-uncertainty setting prefer to adopt the conservative approach of non-equity mode of entry,

while, in big power distance environments, due to the information transfer costs and difficulty in transferring skills, the non-equity method provides less downside (Pan and David, 2000).

The notion of control is also paramount when a company is assessing its options for entering a new market since it is the most important determinant of both risk and return. With the high-control that the equity-specific modes of entry entail, the firm is both increasing its return and risk propensity, while with the low-control feature of non-equity modes the company minimizes resource commitment, and thus risk, but also limits its potential returns. Guided by the analysis of the factors mentioned before, the company must find the optimal balance between resource commitment and return maximization when entering a new market (Anderson and Gatignon, 1986).

When looking specifically at the differences between FDI and export modes of entry, the literature suggests that FDI is most prevalent in industries where firm specific know-how is very important and when production costs are higher in the home country than in the host country. Adding variables such as the export marketing cost differential (difference between the export and domestic marketing costs per unit of sale) and costs of control (difference between the costs of controlling and coordinating foreign and domestic operations), we observe a higher propensity of firms to export when the export marketing cost differential is lower than the cost of control, if production costs between countries are not significantly different (Hirsch, 1976).

Foreign investment decisions about the volume and direction of the firm's resources are gradual and sequential over time (Kogut, 1983) and, while in the beginning, firms are expected to have a strong preference for destinations with similar culture and less risks, that is not observed in later stages of foreign activity as the uncertainty premium in secondary markets will start to fade and decisions will be leaned more towards the relative associated costs and the potential of each market (Davidson, 1980).

IV. Case Study

1. The Company

Founded in 1957 in Azambuja, Portugal, Sugal is currently one of the biggest national players in the agri-food sector and the second largest producer in the tomato processing industry worldwide, with a production of *circa* 2 million tonnes of processed tomatoes per year with the company also having an important role in the fruit purées industry.

Sugal is a born global company positioned towards the international market since its inception and it currently exports 95% of its total production to more than 70 countries in all five continents. In addition to that, the company's production facilities are spread across the North and South hemispheres in Portugal, Spain and Chile, which makes Sugal the only player in the industry to have two crops per year and, as a result, a larger production season than any of its competitors.

Currently, Sugal has five factories in those geographies which include the original Azambuja factory (built in 1957) and the Benavente factory (purchased in 2007) in Portugal, the Sevilla factory in Spain (purchased in 2010) and two other factories in Chile, in Talca and Tilcoco (both purchased in 2012). The Portuguese and Spanish factories only produce tomato products while the Chilean factories also produce fruit purées alongside the transformed tomato (see Appendix A).

Most of the company's production is oriented towards B2B, but Sugal also creates products that are sold directly to the end consumer through either its clients' brands or its own brand, *Guloso*, which is the market leader in Portugal for sauces and tomato products.

Over its 60 years of existence, the company has sought to create a business that uses the rich agricultural resources of the land in a sustainable way through continuous investment in know-how, innovation and technology to improve its operational efficiency and to create the best quality products in the market.

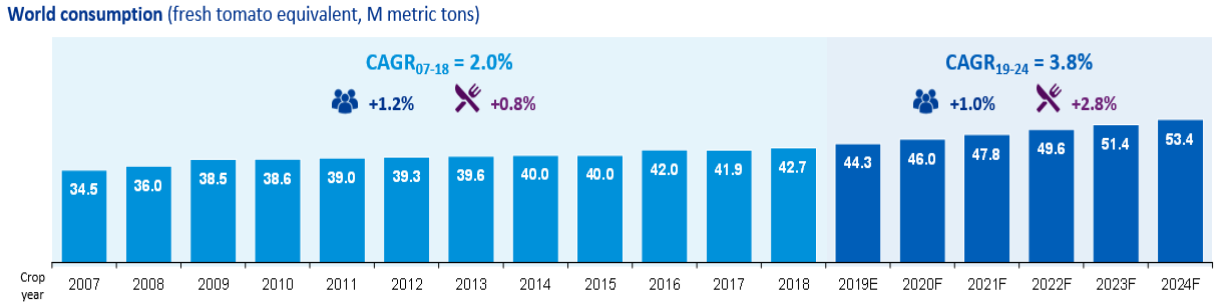
2. The Tomato Processing Industry

Tomato production occupies a very preponderant role in the overall global production of vegetables with 180 million tonnes of fresh tomatoes being produced, on average, every year. While not reaching the levels of overall total production of rice and potatoes, tomatoes are actually the leading vegetable in the processing sector with almost 39 million tonnes of tomatoes being processed each year in factories all over the world.

Studies point towards a moderate growth of the market in the near future, with world production of processed tomatoes forecasted to reach a market volume of 52.6 million tonnes by 2026 which translates to a CAGR of 3%. This value is below the expected value for the overall vegetables processing market, a CAGR of 7%.

Consumption of tomato-based products has been on a steady growth for over a decade which is expected to continue with the forecasted CAGR for 2019-2024 being 3.8% superseding the CAGR observed between 2007 and 2018 of 2%. The demand for tomato is relatively stable worldwide due to its role as a commodity that is a staple in most households and the versatility that tomato products can offer.

FIGURE 2 – World Consumption of Tomato 2007-2024F (in million tonnes)



Source: KPMG. *Demand Trends*

The growth in consumption is explained by many factors that differ according to geographical and socio-economical dimensions. In developed countries, the expansion of urban population and the rising health awareness of its people has led to increased consumption of fruit and vegetable-based products (tomatoes, specifically, are known for preventing certain heart diseases). In developing countries, the emergence of a new middle class with more disposable income and the increase of urbanization can explain the favoring of processed tomato over the

fresh alternative due to its longer shelf-life, while the intensified presence of fast-food chains is another reason for the growth in these markets as those chains are reliable clients of the processed tomato companies.

On the production side, the Top 10 producing countries are responsible for more than 85% of the total production of processed tomato. The USA is the largest producer in the world with almost the totality of its production coming from the state of California which, alone, produces more than any other country. Spain occupies the 4th position worldwide behind the US, China and Italy, respectively, while Portugal occupies the 8th position and Chile rounds out the Top 10.

FIGURE 3 – Global Production of Tomato for Processing 2016-2020 (in million tonnes)

Producer (in m/ton)	2016	2017	2018	2019	2020
California	11,470	9,492	11,137	10,144	10,258
China	5,150	6,200	3,800	4,600	5,800
Italy	5,180	5,200	4,650	4,801	5,166
Spain	2,950	3,350	2,800	3,200	2,650
Turkey	2,100	1,900	1,300	2,200	2,500
Brazil	1,450	1,450	1,400	1,200	1,400
Iran	1,150	980	750	1,650	1,300
Portugal	1,507	1,554	1,198	1,410	1,262
Tunisia	650	643	618	815	962
Chile	800	1,080	1,211	1,100	907
Ukraine	550	650	735	710	800
Top 10[(2)]	32,957	32,499	29,599	31,830	33,005
Top 10[(2)] vs Global	87%	86%	85%	85%	85%
Global Processing	38,072	37,797	34,815	37,383	38,777

Source: IMARC. *2021 IMARC Tomato Processing Market Research*

The expectation for the near future is that the USA will continue to face a downturn trend in production with drops in productivity, shortage of water and the emergence of alternative cultures explaining that decrease. In China, the shutdown of some plants due to environmental concerns also foreshadows a drop in production while in Italy there are positive indications that production will grow with the increase of the average price of tomato.

For the countries where Sugal has production facilities in, it is Chile who has grown the most in the last 5 years, with a more noticeable fall in 2020, which is expected to be overcome in the following years, if natural conditions remain favorable. In Spain, growth has been slower because of water and frosting problems in the fields while, in Portugal, climate constraints and agricultural productivity have brought some setbacks to the country's production.

The tomato processing industry is a cyclical industry with recurring shifts in price and production. The main drivers of that cyclicality are the global production capacity and stocks which can cause some imbalances in the demand-supply relationship.

When tomato prices increase, new or existing players will increase their capacity which will lead to an upward movement in supply surpassing demand levels and causing prices to go down. A decrease of global prices will tarnish the margins of existing players, which will then lead to the disappearance of less profitable producers from the market and reinforce the consolidation of the industry which should smooth production cycles and reduce the volatility of prices.

Additionally, stocks are also an important driver of supply since they can be managed according to the market situation. When tomato paste prices are lower, big players can stock up their products (due to the non-perishable feature of tomato products) until a better moment arises in the market. On the other hand, when crops are affected by adverse environmental conditions, stocks will be reduced which will put pressure on prices to rise.

Over the last five years, the tomato processing industry has been operating well below installed capacity due to high stock levels in the market which has caused processors and growers to scale back production which led to prices decreasing. With demand rising and even less stocks available, prices finally rebounded throughout 2019 and incentivized production again. As a result of this rebound in prices and stable increasing global annual demand, prospects are looking good for the tomato processing industry.

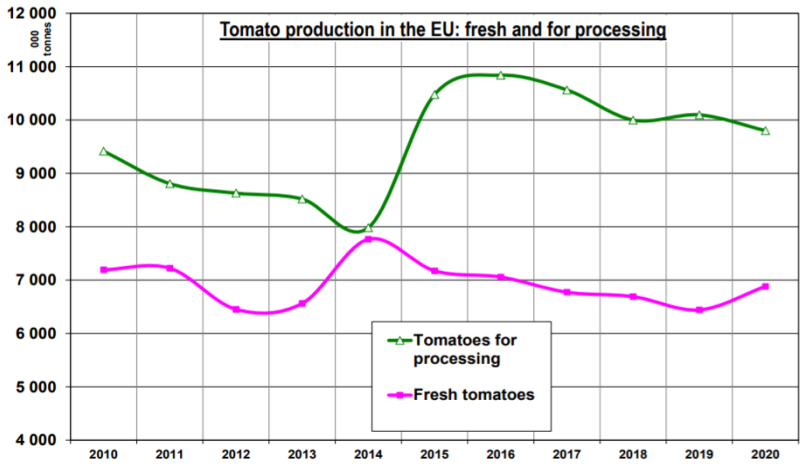
The European Union

The tomato industry has been one of the most reliable and crucial industries to the European Union economical backbone for some years now, with 18M tonnes of tomatoes (including processed ones) being produced in the bloc in 2019, representing 30% of the overall production of all vegetables.

When talking specifically about tomato processing, the industry has also been gaining an important role in the European Union market since 2014 when a striking gap took shape between the production of tomatoes for processing and plain fresh tomatoes. In 2020, the

volume of production of processed tomato was 9.8M tonnes (more than half of the overall tomato production) illustrating why the industry is such a big source of growth.

FIGURE 4 – Tomato Production in the European Union 2010-2020 (in million tonnes)



Source: European Commission. *The tomato market in the EU: Vol. 1: Production and area statistics*

Industrial tomato production in the EU is dominated by three main producing countries: Spain, Italy and Portugal with the countries representing around 90% of European production and making the EU a very strong net exporter of the product.

Portugal

Portugal is the world's largest producer of tomatoes *per capita* and the sixth biggest producer in the world which can be explained by the very favorable natural conditions that Portugal enjoys.

90% of the tomato produced in the country is oriented towards industrial production and Portugal exports almost all of the processed tomato that it produces with 70% of those exports going to other EU markets.

Despite that, the level of processing tomato produced has faced a slight downturn in the last couple of years, with the production in 2020 facing a 12.8% decrease from the year before mainly due to the decrease of the installed area for this kind of production and lowering average productivity.

Looking at the value of exports of processed tomato from 2010-2020, Portugal has seen a steady growth until 2014 and has mostly stabilized since then, reaching its peak value of $258M in 2018 and facing a slight downturn after that. Countries like the UK, Germany and Japan are some of the biggest contributors to Portugal's value of exports and the country is starting to gain additional value from a growth in exporting to countries like Sudan and Libya in the North of Africa.

Spain

Spain is the 2nd biggest tomato producer in the European Union and the 4th biggest producer of processed tomato in the world behind only the USA, China and Italy. Due to its very favorable natural conditions, the Extremadura region is the main area for tomato production accounting for close to 75% of all the vegetable's crops in Spain.

In Spain, the percentage of tomato production that consists of processed tomato is not as one-sided as in Portugal, with the value being 59%, but Spain's production more than doubles the Portuguese one.

In 2014, Spain saw a big increase of the production of processed tomato which could be attributed to the incremental investments made in the industry after a drop in profitability of the rice sector, a major competitor of tomato products.

The Iberian country is also a tomato net exporter with the value of its exports observing a big leap forward from 2012 onwards with its largest value of $420.5M reached in 2018. Countries like Germany, France and the UK have generated much of that revenue, but there has also been an emergence of North Africa and the Middle East as promising destinations.

Chile

Chile is the 2nd largest producer of processed tomato in South America and 10th worldwide with an overall production of 907 000 tonnes in 2020 which, for comparison, equates to 68% and 35% of the production of processed tomatoes of Portugal and Spain, respectively. While Chile hasn't reached the levels of the main European producers, it has been gaining an important role in the tomato industry of South America, being the main tomato paste exporter of the Southern Hemisphere with 80% of its production going towards foreign markets.

From 2018 to 2019, there was a significant increase of over 50% of the value of the Chilean exports of processed tomato from $96.4M in the year prior to $147.9M. Most of that value is attributable to the highly dependent neighboring Latin countries, but also to the increase of Chile's export activity to farther places like North America (USA in particular) and the Far East (Russia, Japan and Malaysia).

Chile also enjoys the same favorable Mediterranean climate that Portugal and Spain have, but, despite that, the country suffers from limited availability of land surfaces due to the competition for space from other crops like cherries and walnuts, which has detracted from some of its potentially even bigger growth.

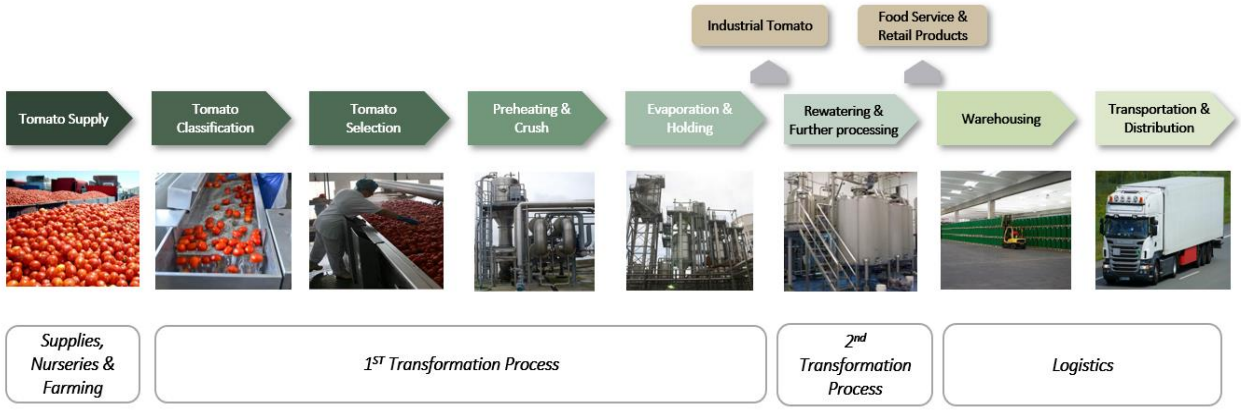
3. Sugal's Production Process

The tomatoes that Sugal uses in its processing activity come from two different sources. 25% are from plantations that are directly controlled by the group while the other 75% are purchased to local farmers. Since Sugal has gained a very dominant role in the market, the company has great bargaining power to negotiate at which price it buys the tomatoes.

Sugal's production is divided across three different segments of clients with the largest chunk of it pertaining to the industrial B2B tomato production which represents 91% of total revenues, while retail and food service production represent 5% and 4% of total revenues, respectively. 81% of total revenues come from tomato paste, 10% from fruit purées and 9% from retail.

The process of production always starts with either the Supply of tomatoes from local farmers or the in-house Farming process that Sugal develops in its own fields. This stage includes seed selection, nurseries and harvesting. After that, the harvested/supplied tomatoes are brought to the factory and are identified and subject to a quality control process. If they are considered eligible, then they are moved to the Preheating and Crushing process where the juice is obtained and subsequently to the Concentration stage. After this first sequence, the production process differs depending on the type of product that is being produced. For the Industrial production, the tomato paste obtained is added to the stock and sold to the B2B clients, while for Retail and Food Service production a second transformation process is carried out to create a product suitable for B2C clients (see Appendix F).

FIGURE 5 – Sugal's Tomato Production Process



Source: Sugal. *Company's reports*

Industrial B2B sales are directed towards many high-profile customers that have high-quality and high-volume demands and are looking for value over price, but the company also caters to a diversified range of clients with the major one only representing 8% of total sales.

Food Service clients, on the other hand, are composed by players in the HORECA segment that buy a specialized product where certain features like the packaging are different from the ones for Retail. These clients are characterized by having very different and specific needs.

Finally, the Retail stream is aimed at the final retail customer, through either Sugal's own brand *Guloso* or through its clients' retail brands. Many of them require alteration to the normal recipes with ingredients added on to get a distinguishable product that can be directly consumed.

Sugal has a long and almost continuous production throughout the year with the distribution of its factories across both the North and South hemispheres. Due to that, the different stages of the process do not happen at the same time in Chile as they do in Portugal and Spain. The farming process happens from March to June in Portugal and Spain while in Chile, due to the diametrically opposed climate conditions, it runs from September to December. The harvest and production process happen from July to September in Spain, from August to October in Portugal and from January to April in Chile.

Sugal has 12-18 months of controlled Working Capital needs due to its efforts to nullify any price risk by having advanced negotiations with suppliers (which occur before the farming

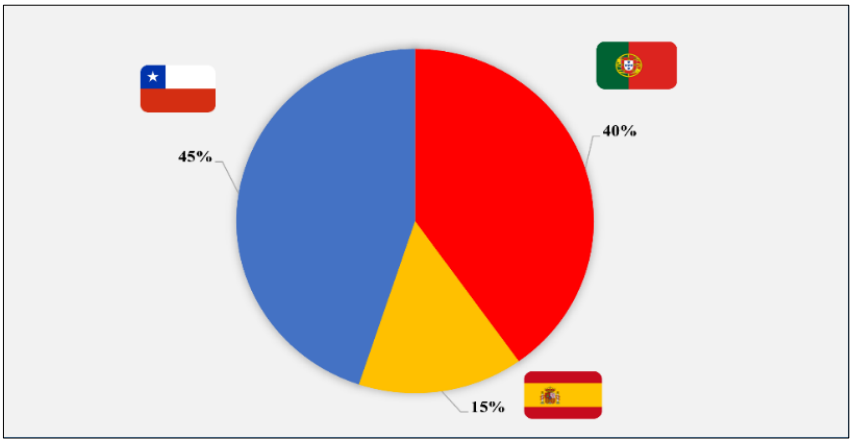
process begins) and customers (spanning the period since farming begins until the final stages of product delivery). Besides that, the company also has a robust insurance policy that covers the entire production cycle from crops to credit risks.

The tomato crop is dependent on very specific conditions in order to generate a quality product and these conditions were one of the main factors that influenced Sugal's decision to establish its plants in the locations that it has. Tomatoes cannot be grown in very extensive areas of the world and need humidity and rich soils that very few regions in the world can offer which is why Sugal chose Portugal, Spain and Chile as its production locations, since all of them are positioned in a Mediterranean Climate area, which is ideal for tomato farming.

Portugal's proximity to the Atlantic Ocean combined with the richness of the soil and Mediterranean weather of the Ribatejo region allows for perfect maturation and a unique color and freshness of the tomato, while Spain made important changes to its agricultural system reinforcing the role of tomato production on its large areas of productive soils, yielding great products during the last couple of years. In Chile, the very rich land and fresh water coming from the mountains has propelled Sugal's production to grow very rapidly and more than in any of the Iberian locations.

Also important to note is that tomato needs to be processed in a very short period of time as it risks losing its freshness and quality if it has to be transported through long distances to get to the factory. That is the reason why Sugal has made sure that all production facilities of the Group are located next to the main tomato crop areas so that tomatoes retain all of their initial natural properties.

FIGURE 6 – Share of Sugal's Production by Country 2020



Source: Data adapted from Sugal. *Company's reports*

4. Vertical Integration

One of the main distinguishing aspects of Sugal's production process is that the company has a fully vertical integration which enables it to have control over the entire chain "from seed to plate". This traceability is vital so that Sugal can use its valuable know-how from the first stage until the last to get a product that lives up to the highest quality standards that the company abides by. The vertical integration process happens along the value chain from seed nursing to processing for both the industrial and FMCG streams.

The process starts with the seeds that are selected according to soil and climate conditions with the R&D Centre conducting analyses to improve some of the agricultural parameters such as yield and color. Then, the fields stage of the process is key in determining the quality of the final product, so the company ensures that the best agricultural practices are followed at all times. Currently, around 25% of the total sourcing of Sugal comes from its own fields which allows the company to better understand the concerns of farmers and develop innovations on the fields that are then shared with them in order to increase their productivity and improve harvest quality. This is a win-win scenario for both, as farmers are able to produce more and better crops while Sugal guarantees a stable and competitive supply of tomato at a fair price.

Then, when it's time to harvest the planted tomatoes, Sugal puts in motion a plan that reduces, as much as possible, the time span between the picking and the industrial use through a fully automated process that brings cost and time savings to the enterprise.

When it comes to the Retail production destined for the FMCG segment, Sugal allows industrial clients to use its facilities to test new innovations to their products that will bring added value to both parties. Although the FMCG segment is not Sugal's core business, having this proximity with the clients and their ideas brings added knowledge to the company on the market, the challenges that retailers are facing and the current preferences of consumers. Furthermore, this ownership over the Retail stream allows the company to use its factories during the whole year, even in off-season, when production of industrial B2B products slows down due to the absence of fresh tomato.

5. Sources of Competitive Advantage

Sugal's success was built over the years over some strong pillars that allowed the company to gain a sustained competitive advantage over its competitors.

The first one of those pillars is the Location of the fields and production facilities. As mentioned before, Sugal is the only player in the world with two crops of tomato per year thanks to its geographically diversified production present in both hemispheres which allows the company to leverage mild climate conditions that are ideal for tomato growing while mitigating any potential environmental risks. Furthermore, the fields that Sugal controls are strategically located around the production facilities in order to ensure that the time elapsed between picking the fresh tomatoes and processing them is as short as possible in order to conserve the quality and freshness of the product.

Another important source of competitive advantage for the company is its Operational Excellence which is potentiated by the strong investment Sugal has made in developing the most advanced technology and strengthening the know-how of its workers. By constantly looking to innovate with new and better-quality products and by having an expert team on the field that brings efficiency and rigor to the entire process, Sugal is achieving better margins than competitors and a solid foundation for growth year after year.

It’s also crucial to harken back to the important role that the adoption of a Full Vertical Integration has had on achieving that competitive advantage. By having both an upstream and downstream integration, Sugal controls every stage of the process which allows the company to maintain the quality of its products, quickly intervene to resolve any problem in the chain, invest in areas in which opportunities of development are found and, most importantly, create synergies between the different pieces of the production process.

Due to the quality of its products and growing reputation, Sugal has also been able to assemble a strong and diversified Customer and Product Portfolio that rely on Sugal’s advanced industrial infrastructures and expertise to provide the best product in the market. The Group has a strong relationship with big clients, but it has also built a vast network of smaller firms to which it sells to. The product specification and very high-quality standards demanded by its most reputable clients prove to be a high barrier to entry to other potential firms in the sector.

Finally, it is important to mention the focus of Sugal on Quality & Food Safety and on a Sustainable Production that is achieved with controlled origin and quality-first philosophy that the company adopts.

Since consumption of a basic commodity like tomato doesn’t change drastically over the years, the Group’s strategic focus is not primarily on pricing, but on outstanding quality and high efficiency which is one of the most important determinants in gaining market share and retaining more clients.

Besides that, Sugal also understands the role that the company has inside its community, so it strives to make its production as sustainable as possible from farming practices that include soil preservation, better water usage through recycling and reusing, to the industrial process where factories are equipped to promote friendly energy usage from renewable sources. Sugal has invested to reduce energy consumption cutting on its CO2 emissions, which are captured (in excess) by the fields and inch the company closer to the goal of carbon neutrality of its value chain. In addition to that, Sugal also has packaging which is environmentally friendly and promotes re-usage and recycling.

The company was the first one in the sector to implement the carbon management initiative and it is certified by the *Carbon Disclosure Project ISO 14001* as well as being a Unilever Sustainable Partner since 2013 after implementing sustainable measures of production in its Chilean plants.

6. The Internationalization of Sugal

6.1. A History of Expansion

Sugal's internationalization journey is tied to Sugal's activities since the beginning as the company set itself as a born global company and started exporting its products right from its inception.

Today, the company is the second largest producer worldwide with plants in two different continents, one of the most diversified players in the industry with rich product and client portfolios and a financially strong player achieving levels of profitability and efficiency far above the industry's average. This strong and sustained growth of Sugal cannot be detached from the process of internationalization which is the most important driver of the success and longevity of the business.

When Sugal's first plant was opened in Azambuja, an important tomato producer called IDAL was already operating and making a stamp in the industry. Tomato had always been a vital part of Northern European eating habits, so the decision of Portuguese companies to export the product to those nations seemed obvious as the country enjoyed a comparative advantage in the production of tomatoes that some other countries did not, and there wasn't a big enough demand in Portugal for tomato paste to deplete the full production.

Right from the onset, Sugal followed that industry trend and started exporting its tomato products to the United Kingdom and Scandinavia as these countries had a lack of the ingredient throughout the year. In the second half of the 1960s, Sugal added to its export destinations the two large markets of Canada and the USA which, at the time, did not produce much tomato and relied heavily on imports of the product.

During the 1970s, Sugal branched out to different European markets (Germany being the most important one) and consolidated its presence in the continent in the following decade just as Central Europe started to gain a preponderant role in the industry. At the same time, Portugal joined the EEC (later becoming the European Union), in 1986, which allowed for facilitated trade between member states, as trade tariffs were abolished, and companies in the bloc gained competitiveness over foreign competitors. Despite these benefits, the enrollment of Portugal in the EEC also brought to an end the strong trade relationship that had been built with Canada and the USA as customs fees shot up and Sugal lost its competitiveness in the North American markets.

As one cornerstone fell in one side of the world, another one emerged in the opposite side with Japan becoming a very attractive destination for Sugal's products by the end of the 1980s. The Asian country valued the quality associated with Portuguese products and the transformed tomato sold by Sugal was perceived as superior to any of the items available, at the time, in Japan. This trek to a market culturally so different from the ones where Sugal had exported to before was the first step on an Eastern-oriented trade expansion that continued with the entry in the Middle Eastern market at a time when the region was experiencing an economic boom with the rise of oil prices and the growth of income *per capita*.

In the following decades, Sugal focused on consolidating its position in the international markets where the company had a presence in and on investing in its facilities through improvements to the process and adoption of new technological developments (i.e. the use of evaporators, sterilizers and filters to keep the tomato processing circle closed).

By the 2000s, Sugal had already established itself as an important player in the industry with the improvements made over the previous decades allowing the company to be more efficient and productive, and expansion seemed like the natural progression in the company's history. After increasing the processing capacity of its Azambuja plant in 2002, an opportunity arose to purchase the plant of IDAL in Benavente, Santarém, in 2007 as Heinz (IDAL's owner) was in the process of disinvesting in Portugal. This acquisition not only gave Sugal an extra facility to expand its industrial production but also offered the company the opportunity to enter in the FMCG market as, with the purchase of the Heinz subsidiary, came the famous *Guloso* brand which allowed Sugal to venture into a new business segment.

This acquisition propelled Sugal even further in the national market, with its contribution to the Portuguese production of industrial tomato surpassing 50%, but marginal growth in the country was stagnating due to its reduced dimension and land availability to produce the quantity of tomatoes that the company had the capacity to transform. Sugal had the ambition to expand even further and so it started to look beyond Portugal, considering, at first, Latin America as a potential destination, until another prospect emerged in Andalusia, Spain. Besides showing great potential for tomato production, there was also the geographical proximity to Portugal which could allow for a more efficient management of the company's resources and, thus, Sugal made its first equity-based venture outside of Portugal in 2010 by buying a plant in Sevilla and subsequently constituting the *Tomates del Sur* subsidiary in the Iberian country.

Yet, the Latin America search didn't end there and, as the company continued to develop an efficient business model that it felt could be replicated elsewhere, Chile, Brazil and Argentina emerged as very strong candidates for the next move in Sugal's internationalization process. Chile was the most interesting country, but the existence of two large groups already installed there would jeopardize any chance of Sugal to be competitive. Luckily, the company was again struck with a great opportunity when one of the big Chilean groups' plant was put on sale and, in 2012, Sugal executed another FDI venture by acquiring two Chilean factories, one in Talca and another one in Tilcoco which turned Sugal into the only company in the processing tomato industry to have production in two different hemispheres.

The Chile takeover was a watershed moment for the company on its path to becoming a leader in the industry as, with the purchase of the two South American factories, also came the many trade advantages that Chile enjoyed, a country with great commercial opening to the world and with bilateral trade agreements with almost 90% of the World's GDP in addition to being part of the MERCOSUR, the South American trade bloc that allowed for tariffs-less trade between most Latin American countries (see Appendix G). Distant territories like Australia and New Zealand were now within reach and historically closed countries such as Argentina and Brazil were unlocked with this expansion.

In addition to all those advantages, the Chilean expansion also gave Sugal the opportunity to branch out, once again, and start producing fruit purées, as the plants bought already produced fruit and the country had a very developed industry due to the large dimension of its fruit

harvests that could serve, not only the fresh market, but also the industrial transformation. Portugal and Spain also had the same beneficial natural conditions to produce fruit, but what they didn't have was enough raw material to supply the industrial side of production since almost all of the harvested orchards were being consumed by the fresh products market.

In the last decade, Sugal has focused on the organic growth of the company by performing a great number of investments in all its plants. The Spanish factory bought in 2010 has been upgraded in 2014 and 2015 with a tenfold increase of its capacity, while the Chilean plants were subject to changes in 2016 and 2017 when production capacity was doubled. In Portugal, capacity has not changed, but Sugal has been investing 70/80% per year in new production lines and innovations which have been adding value to the entirety of the process (see Appendix H). An example of that is the adoption of the Tetra Recart, a carton-based packaging format good for the supply chain, consumer and environment (see Appendix I).

Currently, the main goal of the firm is to potentiate all the investments made and build enough supply to fill 90% of the capacity of all company's plants and, together with all agricultural partners, improve agricultural productivity in order for that threshold to be achieved. International expansion is always on the company's mind, so Sugal is open to seize any worthwhile opportunity that arises, but, at the moment, there is no specific target.

6.2. Critical Success Factors

The process behind Sugal's choice of which new countries to export to is based on continuous analysis of different markets to understand what each is buying, who supplies that market and which trends are gaining shape there. As a leading company in the industry, Sugal is proactive in this search looking always to retain an efficiency advantage over the competitors.

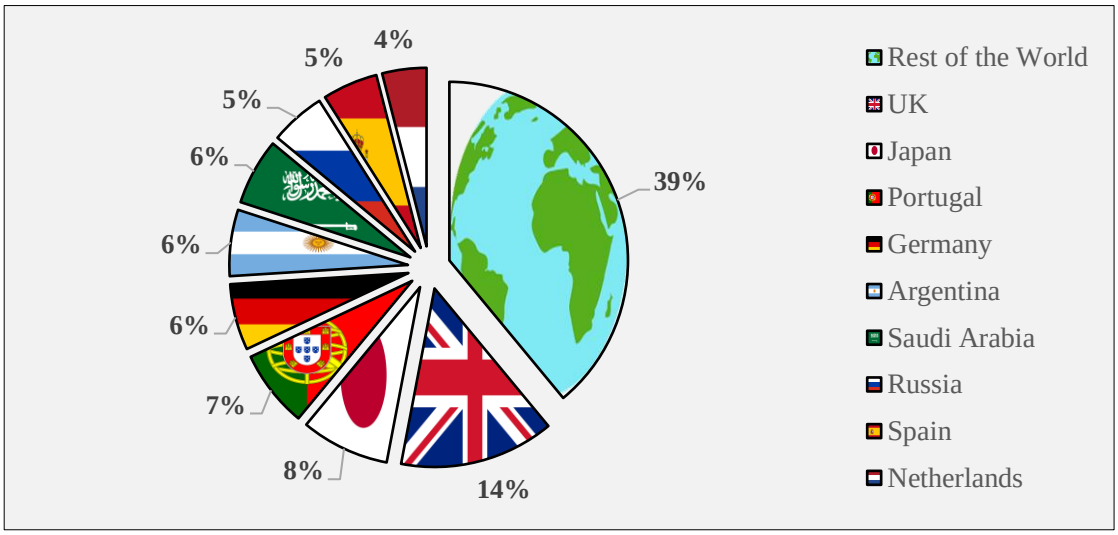
For this process, Sugal deploys a strong and experienced commercial team that is present in many markets and is able to build the best strategy for each. For more mature markets, the company normally chooses the direct export approach, while for less developed ones an intermediary trader might be needed to conduct the business with those countries' clients. However, there is not a one-size-fits-all formula as each market composition and needs will dictate what entry mode is more suitable.

Since the 2000s, when the company saw a boom of its growth and that of its commercial team, Sugal's exporting strategy became primarily supported by the company's autonomy to perform international business with the least possible reliance on intermediaries. Still, this is not always possible due to the complex and diverse conditions that each market presents to foreign companies and, as such, Sugal's strategy also has the flexibility necessary to deal with the presence of external agents of sales when that is the most advantageous situation for the enterprise or required by certain country's clients (i.e., in Japan the company had to do business through a trader as per client demand).

The largest portion of Sugal's exports revenue comes from Europe (40%), but it is South America that has shown the greatest growth ever since Sugal expanded production to Chile, currently accounting for 30% of total revenues and confirming the magnitude and importance of that decision. Asia and Oceania have also been gaining increased importance at 22% of total revenues, while North America and Africa are less important regions for the firm only representing 5% and 3% of Sugal's revenues, respectively. The main driver that explains the growth of Sugal's activities in areas like the Middle East, Southeast Asia and Latin America is the development of their national economies as consumption of tomato paste is inherently linked with wealth and that's why, conversely, countries where economic growth is slowing down and purchasing power is deteriorating such as Venezuela, Brazil and Argentina, are the locations where Sugal's business is showing signs of slowing down.

When talking about specific countries, the most important destination is still the United Kingdom where Sugal has been exporting to from almost the beginning, while Japan comes in second place as the most important market in Asia for the company. After those, we have Portugal, Germany, Russia, Spain and The Netherlands as the greatest European contributors with Argentina being the main South American destination and Saudi Arabia leading the way in the Middle Eastern region. All in all, this assortment of destinations (which account for 61% of the company's total exports revenue) proves that Sugal is indeed a global player in the industry which, through strategically timed expansions, has gained position and competitiveness in a diversified group of markets that span the entirety of the globe. Its worldwide presence and resilience across the years has been supported by the constant push for the highest quality standards, improving not only its product, but also its processes to achieve that goal.

FIGURE 7 – Sugal's Revenue Breakdown by Country



Source: Data adapted from Sugal. *Company's reports*

As mentioned before, one of the most important distinguishing features of Sugal's production is that it has two inversed crops in the North and South hemispheres which, besides enabling a bigger production season each year, it also allows for an extensive sharing of resources and learning. In the first half of the season, in Iberia, new process mechanics and innovations are tested which can then be implemented in Chile six months later. While other groups only have one chance per year to test new ideas, Sugal is in the unique position that it has double those attempts and, thus, it moves professionals from Iberia to Chile, and vice versa, to implement the innovations that generated good results in the previous location. This combined with the transfer of machinery from one country to the other, when there is a shift in production, is one of the biggest drivers of production efficiency and cost reduction that Sugal has achieved.

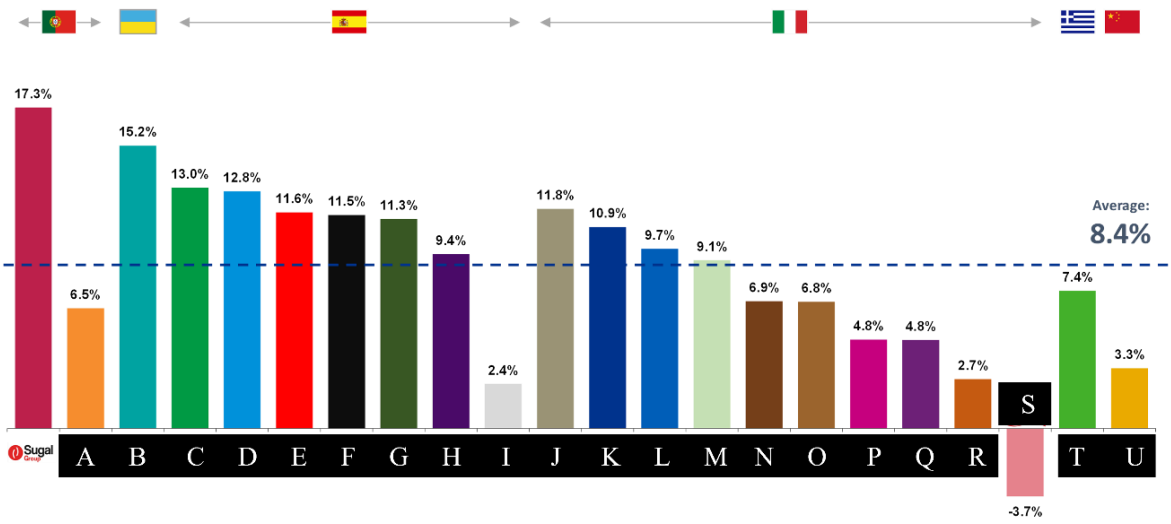
The success of its FDI endeavors can also be attributed to the strong focus on organic growth in the decades prior, as Sugal constantly reinvested in its business as it grew, not only in the Portuguese plants, but, also, in its operations in the exporting markets. The organic growth path allowed the company to retain control of its operations, with greater resource flexibility and reduced risk and created the strong foundation on which the company was able to build on when it started to expand production beyond national borders. Between 2007 and 2019, the company's most fertile period of international expansion, two thirds of Sugal's total investment spending were directed towards FDI.

The company is currently the second biggest producer of tomato paste in the world having produced 1 880 tonnes in 2020 (see Appendix K), which accrued to a revenue of 282.4M€. Chile and Portugal were the largest contributors of total revenues with 44% and 43%, respectively, followed by Spain with a contribution of 13%.

When looking at Sugal's contribution for each countries' total production quantity of processed tomatoes in 2020, we can observe that Sugal is a vital company for both the Portuguese and Chilean industries producing 42% and 65%, respectively, of the total output of each of those countries. In Spain, however, that share only amounts to 7% of the total, which can be explained by the reduced weight that the country has on the total production of Sugal (only accounting for 15%) with the Sevilla plant almost acting as an extension of the Portuguese production (see Appendix L).

Due to its strong focus on operational efficiency, Sugal has been able to keep average EBITDA margins well above the industry's average being leader in the European market of tomato processing. The development of its production facilities was key in achieving this, as they ensure maximum cost efficiency as well as high-quality products which led to the higher margins the company has, when compared to competitors.

FIGURE 8 – EBITDA Margins of Sugal and competitors (FY-3, FY)



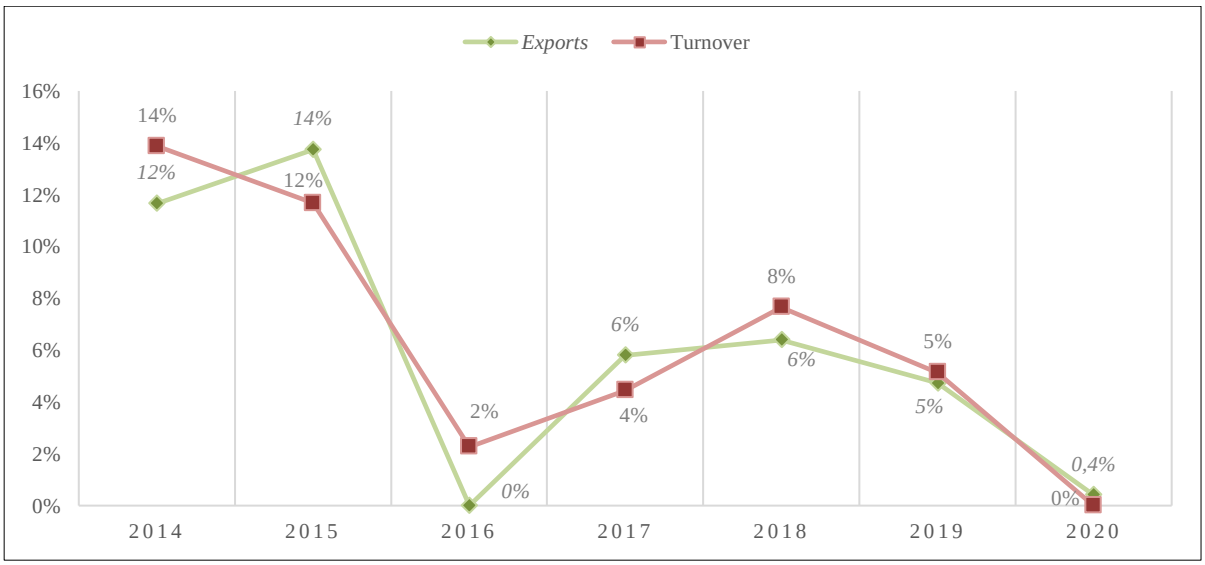
Note: Due to privacy concerns, competitors' names have been replaced with letters each representing a different competitor and its respective EBITDA margin.

Source: Sabi, Amadeus, as cited in Sugal. *Company's reports*

The combination of operational and organizational efficiency, bet on high quality standards and constant search for new and innovative technological developments, has led Sugal on an exponential growth that far surpassed the industry's one with a CAGR of 20.1% versus the 1.7% that the global processing industry attained from 2002 to 2017 (see Appendix M).

Due to the high margins achieved and growth of exports, turnover has mostly seen a positive growth for almost a decade now.

FIGURE 9 – Sugal's Exports and Turnover Growth 2014-2020



Source: Data adapted from Sugal. *Company's reports*

6.3. Future Challenges and Opportunities

In recent years, there has been a shift in food consumption patterns that will only continue to accentuate in the future as consumers are increasingly more concerned with their health and environmental footprint, which is why they will be looking for fresh products with minimal processing that are produced (and delivered) in a sustainable way. In addition to that, the Covid-19 pandemic has also boosted the habit of eating at home, which is expected to remain a way of saving money, with consumers looking for quality products that have a longer shelf-life to prepare their meals. Food digital ordering services, which also saw a meteoric rise during the pandemic, will start to replace some of the regular trips to restaurants and supermarkets/groceries.

Tomato consumption is strongly linked to population growth and household disposable income, which is why emerging economies in East and Southeast Asia, which have seen recent income *per capita* growth, and other developing economies that have seen rises in population over the last few decades, are now responsible for more than half of the global consumption of tomato products, when compared to the historical regions where tomato was always very relevant (see Appendix T). This paradigm shift has put the emphasis on how vital those consumers will be for the industry, in the near future, and companies should be prepared to realize the potential gains that come with it by having in place the infrastructures and resources to serve those markets.

Production wise, expectations are that the industry will grow at a moderate rate with the tomato processing industry in China, one of the strongest worldwide, expected to face a downturn and major weakening due to the restructuring of market-leading companies such as Cofco and Chalkis and to the shift from tomatoes to more profitable crops (i.e. soy) that many Chinese producers are enacting.

In California, the largest region of tomato production in the world, producers fear that extreme heat and water shortages might put future production in peril, with some producers even being forced to shut down their facilities in recent years. The potential stock shortages on the horizon from both Californian and Chinese companies, combined with the aforementioned growing consumption will drive prices further up with many companies doomed to succumb to structural and efficiency problems that excess capacity will entail.

Closer by, in the European Union, the production of tomatoes for processing is expected to remain at the same level of the past 5 years with yield growth and exports volume not expected to change drastically, according to the 2020 EU Agricultural Outlook (see Appendices U, V and W). There is, however, raising concern with the challenges that tomato growers will face with the devastating effects of climate change that are already being felt in the industry.

Spain production of tomatoes is expected to decline more than 20% by 2030 due to water shortages and less cultivated land, lower profitability of tomatoes when compared to other crops and increasing competition from non-EU countries, but the country will still be a leading net exporter even with net exports of the main European producing countries expected to drop by 30% in that period.

For Portugal, the scenario is more favorable with production expected to rise by 40% and exports of tomato products to increase, contrarily to what is expected to happen in Italy and Spain, for example. Yet, there is a potential hurdle to that industry growth in the next couple of years with the introduction of the new CAP that aims at spreading the funds given to each farmer across other types of crops that didn't receive the aid before and, thus, significantly, lowering the fixed payments that tomato growers receive per hectare. This measure can have a significant trickle-down effect across the value chain and can ultimately tarnish the competitiveness of Portuguese companies if growers in the country receive less than their Spanish and Italian counterparts.

When looking at Chile, the country is expected to rebound strongly from the Covid-19 pandemic with a projected 11% growth in real GDP in 2021 and continued growth in following years with the country's food processing industry expected to grow more than 35% by 2030. The trade openness of the South American country has also unlocked business with many countries beyond Latin America in recent years in the Far East and Euroasia regions that can prove to be an important base for sustained growth of the country's industry if some other big importers' economic conditions continue to deteriorate (i.e. Venezuela).

Despite the positive signs, there are some challenges for tomato production in Chile, such as concerns over extreme droughts in the country and less technological development of tomato harvesting compared to other alternative cultures, which must be tackled promptly to avoid supply shortages and reduced competitiveness of the country in the international market.

Africa still represents the greatest untapped market for tomato processing companies, with the continent having the largest percentage of the world's remaining uncultivated land, but not having the infrastructures needed to get the most from that land.

With the fragmentation of small-scale farmers, which still use very rudimental agricultural tools, and scarce yields, the continent's agricultural productivity is simply very low to compete with bigger producers worldwide, but a 2019 McKinsey report entitled *Winning in Africa's agricultural market* says that there is potential to increase that productivity through significant investments that go from inputs to infrastructures and trade developments.

Nigeria, in specific, shows great potential for the tomato processing industry with the country being one of biggest tomato markets in Africa since the vegetable is an important ingredient

in many of the country's gastronomical dishes. However, most of the tomatoes consumed are imported from countries like China, Italy and the USA, since Nigeria's national production simply cannot respond to the growing demand boosted by its population growth due to the reduced scale of production in the country, the lack of quality infrastructures and low agricultural productivity.

Clearly, there is still a long way to go to make tomato production a worthwhile investment in Africa, but business ventures like Tomato Jos, a tomato processing company that has opened its first factory in Nigeria, in 2021, after years of working directly with farmers to improve their yields and guarantee a stream of reliable supply to its plant, has shown that there is potential to be fulfilled in the country. Nigeria's rich history with tomato, its push for decreasing reliance on imports and its proximity to some of the continent's biggest importers and consumers of tomato paste are also important factors to why Nigeria could turn out to be a very appealing entry way into the African continent.

There are also other relevant locations that have emerged recently as high potential prospects such as Iran, one of the largest consumers of tomato products in the world, which has seen a growth in its fields' yields in 2020 and wants to further develop its processing industry. The country is located in the Persian Gulf close to many countries which have tomatoes as an important ingredient in their national cuisines and are experiencing recent economic growth.

Another potentially interesting market is India, which currently consumes most of its tomatoes in the fresh form and processes less than 1% of its production. The main reason for that comes down to the difficulties of processors in obtaining a consistent source of the raw material as complicated negotiations with farmers are a hindrance too hard to overcome.

Indian demand of processed tomato far surpasses its production, and that gap is expected to widen even further in the future as population and demand for tomato products (especially in the HORECA segment) continue to grow. This makes the country a net importer of processed tomato, at the moment, but that can change with the leveraging of the land availability the country has in areas suitable for tomato growing, effective enactment of government policy and a boom of the middle class.

With the landscape of the tomato processing industry evolving in new directions, it will be crucial for Sugal, as a leading company in the industry, to keep track of when and where new opportunities will come from and be prepared to capitalize on them faster and more proficiently than competitors.

VII. Teaching Notes

1. Overview

This case study covers many different facets of strategical management and the internationalization of the firm, which is why it can be helpful as a pedagogical resource to showcase a real-life application of commonly discussed topics in a Management degree.

In the next sub-section, five questions (and their respective suggested resolution) are assembled to cover different dimensions of the internationalization process described in the case and to test students' dexterity in applying concepts learned in class to a real-life situation as well as encouraging them to develop a critical view on the topic. The case is broad enough to be applied in different courses such as International Business or Strategic Management, among others.

It is recommended that the case is read by students before it is discussed in class, with the literature review available to be used as a supplement to help them be versed on the main theoretical concepts that are presented throughout the case.

Class discussion is also encouraged since Sugal is an interesting Portuguese case of success with a rich internationalization journey which is ripe for a layered debate and exchange of ideas between students and professor. The questions presented in the next section can be used to apply different frameworks to the specific case, but they also have the objective of allowing students to come up with their own recommendations and personal interpretation of what they read.

2. Case Questions and Suggested Resolution

1) How would you describe the current global competitive environment of Sugal (Competitors, Suppliers, Buyers and Substitutes)?

To answer this question, it will be helpful to apply the 5 Forces of Porter Framework to analyze the complete scope of Sugal's competitive environment and the respective sources of competition.

Starting with the Threat of New Entrants, we can say that it is low due to the high capital and investment requirements and economies of scale that tomato processing entails, and the high-quality standards and product specification required by clients that take a long time to be developed and recognized by the market. Oppositely, the Threat of Substitutes is actually very high in the industry since tomato products are a commodity that is (for the most part) undifferentiated and, thus, switching costs and loyalty to specific brands is relatively low in the industry.

Looking at the Bargaining Power of Suppliers, Sugal's assertion as one of the biggest players in the industry and its strong relationship with farmers has allowed the company to have great bargaining power to negotiate its buying price of tomatoes with contracts being negotiated in advance before the farming season even starts.

On the other hand, the Bargaining Power of Customers does have some weight to it due to the commodity quality of the tomato products that Sugal produces and higher price sensitivity of final consumers. When talking about the Retail and HORECA-segment clients, they mostly have low switching costs between suppliers, but Sugal does focus on ensuring that its products are of superior quality and adapt their products to fit with the very specific requirements of each client which brings a certain distinguishability to the company when compared to competitors and brings added value to distributers and retailers, harder to be replaced. Besides that, the company's constant negotiation with customers and its strong reputation in the market bring down the customers' bargaining power, which could be considered high for most companies in the sector, but is actually moderate for Sugal.

Finally, Industry Rivalry is very intense in the tomato processing industry as many diversified competitors of different sizes fight for existing market share in a slow growth industry. Product diversification and brand loyalty is not easy to attain due to the nature of commodity products and firms are price-takers, which means that building scale to improve cost efficiency is crucial to survive in the industry.

2) Describe Sugal's internationalization process in the scope of the theoretical frameworks discussed (Internationalization Theories, Knowledge Creation, Foreign Entry Modes, etc.)

Sugal can be characterized as a born global since its internationalization journey started right at its inception. This happened for different reasons: first, Portugal had the perfect natural conditions to grow tomatoes and Sugal had the right resources in place to be able to leverage those inputs and produce a quantity of industrial tomato that consumption in Portugal was not enough to cover; secondly, due to the features of the tomato processing industry, born globals must speed up their access to lead markets in order to offset the high entry costs and stiff competition, selecting countries that have high demand for tomato products, offer fast potential growth and have historically good trade relations and a certain culture alignment with the firm's home country. The UK and Scandinavia fitted the bill, so those were the original destinations of Sugal, followed, in the next decade, by the USA and Canada, also big tomato paste consumers, as the company started to broaden its network and improve its R&C coordination.

Sugal's expansion to further markets grew at a faster rate in the following decades due to its acquired market-specific knowledge, strengthened international commercial relationships and further integration of its business which reduced transaction costs, allowed for better production coordination and efficient use of resources and led to a stronger consolidation of its market position. The expansion to Japan and the Middle East and further geographical diversification was only possible because of those developments and the subsequent bet on organic growth was crucial for the overseas production expansion that came in the 21st century.

The decision to partake in its very first FDI endeavor in 2010, buying the Sevilla plant, was based on country-specific factors (excellent conditions for tomato production, proximity to Portugal, and lower risk), but also to the advanced state of Sugal's technological capabilities, know-how and resources usage, which made expansion of production to foreign markets a worthwhile investment that would confer further economies of scale to the company as production capacity in Portugal was reaching its breaking point.

The Chile expansion was based on much of those same reasons, but was also a unique opportunity for the firm to gain a reinforced presence in the South American, Oceanian and, to a certain extent, Southeast Asian markets with the trade tariffs exemption that Chile enjoyed with the majority of them and the recent economic growth of the country.

3) What are the most important factors which made Sugal gain its pole position in the global tomato processing industry? Explain the reasons why those factors were crucial for the company's international success.

Sugal has been able to have such a rapid and sustained growth in the global market over the years, mainly due to its strong focus on operational excellence, the undertaking of constant investments to potentiate knowledge creation among its workers and upgrade productive resources through technological development to, ultimately, improve the quality of all its products and regular assurance that the process is as efficient as possible, something that is crucial in the tomato processing industry.

In addition to that, Sugal's vertically integrated position gives the company more flexibility to test different product variations without having to comply to the stricter timeline of the normal period of production, expanding its duration with the goal of capitalizing on the firm's industrial assets and large capacity, while also having the proximity and control over all stages of production to correct any inefficiency or problems that might arise and to be able to capture margins from different stages of the value chain.

When it comes to the international expansion, we can trace back the high productivity and cost efficiency of the foreign plants owned by Sugal to the choice of locations, as Spain and Chile are some of the best places to grow fresh tomato, which guarantees a reliable supply of the raw material to the company's plants, but, also, to the extensive CAPEX investments that the firm undertook to increase production capacity and to fine-tune the process in order to achieve maximum efficiency in both costs and sustainability without ever jeopardizing the quality of its products.

Morever, cost efficiency could also be achieved through the leverage of resources synergies with the sharing of production equipment between the different hubs whenever a shift in the localization of production occurs, as well as the two-fold opportunity to test new innovations

with R&D projects being employed twice as fast as competitors with the extended production cycle that Sugal enjoys.

It is also important to note that the group built a very strong network of suppliers and clients over the years which, in combination with the deployment of an experienced commercial team, propelled its growth abroad. Sugal's industrial B2B sales are mainly oriented towards its biggest clients, but the company has done a good job in diversifying its range of customers and mitigating the risk of potential defaults.

4) How would you describe the evolution of the production, turnover and exports of Sugal over the last decade, and what impact did the expansion to Spain and Chile have on that evolution?

The last decade was a pivotal period for Sugal's growth since the expansion to Spain and Chile asserted the company as an industry leader and allowed it to expand on the sustained growth it had been amassing in the years prior. From 2010, when the company was only producing in its two Portuguese factories, to 2019, when Sugal was capitalizing on all the investment and upgrades made to its Spanish and Chilean plants, total production grew by over 180%. The Spanish factory 10x capacity upgrade resulted in a massive increase in production of almost 500% in only two years, while the investments made in 2016 and 2017 to the Chilean plants saw a growth of 58% in the following years. The observed turnover growth can be attributed to the enhanced capacity and productivity, increase of export destinations and a steady rise of demand.

Due to the high reliability of Sugal on trade and foreign sales, it is not surprising to see the trends of growth in turnover be in line with that of exports. Following the upgrade of production in Spain, Sugal's revenues in the country have been increasing steadily over the past 5 years with exports driving growth and the investment made over the last couple of years in the industry allowing competitiveness in foreign markets to increase.

In Chile, growth has also been more pronounced the years after the CAPEX investments and it is the South American country that has shown greater signs of growth and impact on the progress of Sugal with the chunk of exports revenue coming from the continent almost matching the values from Europe.

On the other hand, Portugal has shown an inverse pattern of negative growth from 2015 to 2019 with the decrease of production volume, exports value and overall turnover, which can be attributed to the lowering agricultural productivity. However, there is potential for growth in the country and Sugal's home country is expected to rebound from the fall of the last couple of years.

5) What are some internationalization opportunities that the company can pursue in the future and how should it deploy its strengths to get the most out of them?

While the tomato processing industry should keep growing at a relatively stable rate, there are some shake-ups that can affect Sugal both on the consumption and production sides.

Consumers' concerns over sustainability will only accentuate over the coming years which means that the company should continue to make strides in achieving a top-down push for sustainable practices over its value chain, from the growing of tomatoes till the packaging and selling of its final products. Continuing to undertake investments to achieve that sustainability will be key for a big player like Sugal to be seen as an example in the sector and reinforce its brand image and credibility with both B2B and B2C clients.

Also, in the consumption side, the rise in popularity of food digital ordering services (i.e. Uber Eats, Glovo) can offer potential for the *Guloso* brand to modernize itself and reach a wider consumer base as tomato products can be a perfect complement to the most popular requests on these apps (i.e. hamburgers, French fries and wraps). A renewed Sugal's B2C branding strategy and positioning can have reverberations across many of the different markets where Sugal operates and give bigger relevance to the B2C business, with pilot tests recommended to be enacted in a few countries before considering a global extension.

Looking at the production forecast, the downturn of certain Chinese and Californian companies can put the company in a good position to further assert itself as a global leader of the market since the consolidation of the market will benefit large processors like Sugal, which will have the opportunity to gain market share in regions dominated by the American and Chinese juggernauts, possible due to its scale and operational efficiency.

Sugal's strategy to focus first on organic growth and consolidation of current production before enacting any further internationalization has proven successful and should be the way

forward for the company to make sure it continues to have its sustained competitive advantage over competitors and that its R&C are as developed as they can be.

When it comes to further FDI undertakings, there are some interesting opportunities mentioned in the case which have their upsides and downsides.

The overall shortcomings of the production of tomatoes and low consumer purchasing power in Africa is still cause for apprehension when considering enacting a FDI in the continent, but it's undeniable that certain countries like Nigeria are showing above-average potential that can be leveraged sooner rather than later. Its tomato consumption history combined with population growth and the existence of neighbor countries that can be potential export destinations, makes it the most promising entry way into the continent, but Sugal should still monitor how certain tomato processing endeavors develop in the country in the next couple of years before making a move.

India still has a very underdeveloped processing industry with producers having a weak control of the value chain, so it also does not seem to be a worthwhile place for Sugal to invest for now.

In contrast, Iran seems to offer more upside with the country being one of the largest consumers of tomato products in the world, positioned in a region with many tomato-consuming countries and with its agricultural productivity escalating and investments on the processing industry growing, as of late.

For Sugal, undertaking FDI in the country can prove fruitful since many of the neighboring countries are not in the firm's exports radius yet and there is a clear recent uptick of the purchasing power of its inhabitants that is expected to continue, in line with their economic growth. With its decade-long experience in some Middle Eastern countries and the upgraded scale, efficiency and knowledge that the current period of organic growth will offer, there is a case to be made that a first-mover advantage to a market like Iran could propel Sugal even further in the industry, increasing its global presence and capitalizing on potential economies of scale.

VIII. Conclusion

This case study illustrates how Sugal was able to achieve its decade-spanning success in the global tomato processing industry through a mix of constant development of its R&C and production processes to achieve the operational efficiency and integrated control it needed to, first, export to strategically positioned markets and, later on, expand its production overseas and develop a cycle of growth with each expansion and upgrade.

Throughout the case, it is possible to understand that Sugal's focus on producing the best possible products, its integrated position, constant investment in its working capital and strong relationships with stakeholders allowed the company to acquire the capabilities and cost efficiency required to achieve success at a global scale. The internationalization process was crucial for the firm to find a demand that fulfilled its supply capacity and to achieve the scale necessary to compete with the biggest industry players.

With the Covid-19 pandemic still impacting the world at the time of writing, and an energy and distribution crises on the horizon, it will be interesting to revise this case in a couple of years to see how the *status quo* has changed and what scars these crises left on Sugal and the industry at large. Besides that, due to the recency of the company's FDI endeavors, an updated version of the case, down the line, could provide better insights on the resilience of the firm and whether these internationalization efforts paid off in the long run.

References

Scientific Papers

Aaby, N., & Slater, S. F. (1989). Management Influences on Export Performance: A Review of the Empirical Literature 1978-1988. *International Marketing Review*, 6(4)

Anderson, E., & Gatignon, H. (1986). Modes of Foreign Entry: A Transaction Cost Analysis and Propositions. *Journal of International Business Studies*, 17(3), 1–26.

Andersson, S., Gabrielsson, J., & Wictor, I. (2004). International activities in small firms: examining factors influencing the internationalization and export growth of small firms. *Canadian Journal of Administrative Sciences*, 21(1), 22–34.

Barney, J. (1991). Firm Resources and Sustained Competitive Advantage. *Journal of Management*, 17(1), 99–120.

Buzzell, R. D. (1983). Is Vertical Integration Profitable? Harvard Business Review. Published.

Davidson, W. H. (1980). The Location of Foreign Direct Investment Activity: Country Characteristics and Experience Effects. *Journal of International Business Studies*, 11(2), 9–22.

Duschek, S. (2004). Inter-Firm Resources and Sustained Competitive Advantage. *Management Revue*, 15(1), 53–73.

Gabrielsson, M., Kirpalani, V. M., Dimitratos, P., Solberg, C. A., & Zucchella, A. (2008). Born globals: Propositions to help advance the theory. *International Business Review*, 17(4), 385–401.

Grant, R. M. (1987). Multinationality and Performance among British Manufacturing Companies. Journal of International Business Studies, 18(3), 79–89.

Harrigan, K. R. (1986). Matching vertical integration strategies to competitive conditions. Strategic Management Journal, 7(6), 535–555.

Hirsch, S. (1976). An International Trade and Investment Theory of the Firm. *Oxford Economic Papers*, 28(2), 258–270.

Johanson, J., & Vahlne, J. (1990). The Mechanism of Internationalisation. *International Marketing Review*, 7(4).

Knight, G. A., & Cavusgil, S. T. (2004). Innovation, organizational capabilities, and the born-global firm. *Journal of International Business Studies*, 35(2), 124–141.

Kogut, B. (1983). Foreign direct investment as a sequential process. *The Multinational Corporation in the 1980s*, 38–56.

Olmos, M. F. (2011). The Determinants of Internationalization: Evidence from the Wine Industry. *Applied Economic Perspectives and Policy*, 33(3), 384–401.

Pan, Y., & David, T. K. (2000). The Hierarchical Model of Market Entry Modes. *Journal of International Business Studies*, 31(4), 535–554.

Reid, S. D. (1981). The Decision-Maker and Export Entry and Expansion. *Journal of International Business Studies*, 12(2), 101–112.

Teece, D. J. (1998). Capturing Value from Knowledge Assets: The New Economy, Markets for Know-How, and Intangible Assets. *California Management Review*, 40(3), 55–79.

Welch, L. S., & Luostarinen, R. (1988). Internationalization: Evolution of a Concept. *Journal of General Management*, 14(2), 34–55.

Other References

AICEP Portugal Global. (2020). *Exportações Portuguesas: Resiliência e Confiança para Enfrentar o Futuro*. https://www.portugalglobal.pt/PT/RevistaPortugalglobal/2020/Documents/revista-134-setembro.pdf

Deloitte. (2019). *Future of food: How technology and global trends are transforming the food industry*. https://www2.deloitte.com/content/dam/Deloitte/au/Documents/Economics/deloitte-au-economics-future-food-uber-eats-100719.pdf

Diário de Notícias. (2007). *Heinz vende fábrica da Guloso a empresários portugueses*. https://www.dn.pt/arquivo/2007/heinz-vende-fabrica-da-guloso-a-empresarios-portugueses-655144.html

Distribuição Hoje. (2015). S*ugal investe 8 milhões para substituir lata por cartão*. https://www.distribuicaohoje.com/producao/producao-noticias/sugal-investe-8-milhoes-em-linhas-industriais-tetra-recart/

European Commission. (2020). *EU Agricultural Outlook: For Markets, Income and Environment 2020 - 2030*. https://ec.europa.eu/info/sites/default/files/food-farming-fisheries/farming/documents/agricultural-outlook-2020-report_en.pdf

European Commission. (2021). *The tomato market in the EU Vol. 1: Production and area statistics*. https://ec.europa.eu/info/sites/default/files/food-farming-fisheries/farming/documents/tomatoes-production_en.pdf

European Comission. (2021). *The tomato market in the EU Vol. 3b: Trade in processed products*. https://ec.europa.eu/info/sites/default/files/food-farming-fisheries/farming/documents/tomatoes-trade-processed-products.pdf

Fruit Logistica. (2021). *European Statistics Handbook – FRUIT LOGISTICA 2021*. https://www.fruitlogistica.com/fruit-logistica/downloads-alle-sprachen/auf-einen-blick/european_statistics_handbook_2021.pdf

Goedde, L., Ooko-Ombaka, A., & Pais, G. (2019). *Winning in Africa's agricultural market*. McKinsey & Company. https://www.mckinsey.com/industries/agriculture/our-insights/winning-in-africas-agricultural-market

IMARC (2021). *2021 IMAC Tomato Processing Market Research*.

KPMG. (2019). *Demand Trends*.

Maritz, J. (2021). *Producing tomato paste in Nigeria: Tomato Jos' seven-year journey*. How We Made It in Africa. https://www.howwemadeitinafrica.com/producing-tomato-paste-in-nigeria-tomato-jos-seven-year-journey/130599/

Millennium BCP. (2019). *Millennium Agro News #2*. https://www.millenniumbcp.pt/pt/apoio_as_empresas/solucoes-setorais/Documents/MillenniumAgro_News-Tomate.pdf

Observatory of Economic Complexity. *Processed Tomatoes (HS: 2002) Product Trade, Exporters and Importers*. OEC. https://oec.world/en/profile/hs92/processed-tomatoes

OECD. (2021). *OECD-FAO Agricultural Outlook 2021–2030*. https://www.oecd-ilibrary.org/sites/19428846-en/1/3/1/index.html?itemId=/content/publication/19428846-en&_csp_=78a77099f3b0c6eae1de8bfe93d3b09e&itemIGO=oecd&itemContentType=book#section-d1e2832

Prosper Africa. (2021). *African Agriculture is Ripe for Investment - an Interview with Tomato Jos*. https://www.prosperafrica.gov/blog/african-agriculture-is-ripe-for-investment-an-interview-with-tomato-jos/

SAPO Lifestyle. (2018). *Guloso é pioneira mundial em nova embalagem para tomate*. https://lifestyle.sapo.pt/sabores/noticias-sabores/artigos/guloso-e-pioneira-mundial-em-nova-embalagem-para-tomate

SAPO Marketeer. (2021). *Fazer a melhor polpa de tomate do mundo é a ambição da Sugal*. https://marketeer.sapo.pt/fazer-a-melhor-polpa-de-tomate-do-mundo-e-a-ambicao-da-sugal/

Saul, J. G. T. (2017). *China commodities trader COFCO shakes up European operations: sources*. Reuters. https://www.reuters.com/article/cofco-grains-idINKBN1AR1ML

Sugal. Company's reports

Tomato News. (2016). *Chile: Exports, a national priority*. https://www.tomatonews.com/en/chile-exports-a-national-priority_2_220.html

Tomato News. (2018). *China: Cofco sells off its unused capacity*. https://www.tomatonews.com/en/china-cofco-sells-off-its-unused-capacity_2_301.html

Tomato News. (2018). *Future prospects for tomato processing in South America*. https://www.tomatonews.com/en/future-prospects-for-tomato-processing-in-south-america_2_502.html

Tomato News. (2020). *2020 Tomato News Online Conference: João Tavares Correia*. https://www.tomatonews.com/en/2020-tomato-news-online-conference-joao-tavares-correia_2_1219.html

Tomato News. (2020). *Africa: the difficult match between agriculture and industry*. https://www.tomatonews.com/en/africa-the-difficult-match-between-agriculture-and-industry_2_1030.html

Tomato News. (2020). *Africa: imports of tomato paste are decreasing*. https://www.tomatonews.com/en/africa-imports-of-tomato-paste-are-decreasing_2_1029.html

Tomato News. (2020). *India: The sleeping tiger? - Part 1*. https://www.tomatonews.com/en/india-the-sleeping-tiger--part-1_2_1213.html

Tomato News. (2020). *India: The sleeping tiger? - Part 2*. https://www.tomatonews.com/en/india-the-sleeping-tiger--part-2-_2_1214.html

Tomato News. (2020). *Portugal: review of twenty-five years of tomato harvests*. https://www.tomatonews.com/en/portugal-review-of-twenty-five-years-of-tomato-harvests_2_1041.html

Tomato News. (2021). *Pandemic-induced consumer trends are here to stay (part 1)*. https://www.tomatonews.com/en/pandemic-induced-consumer-trends-are-here-to-stay-part-1_2_1493.html

Tomato News. (2021). *The processing tomato industry in Iran - part 1*. https://www.tomatonews.com/en/the-processing-tomato-industry-in-iran--part-1_2_1412.html

Tomato News. (2020). *Short-term outlook for EU agricultural markets in 2020*. https://www.tomatonews.com/en/short-term-outlook-for-eu-agricultural-markets-in-2020_2_1086.html#:~:text=The%20EU%20production%20of%20tomatoes,EU%20tomato%20production%20in%202020.&text=Production%20of%20processing%20tomato%20in,of%20July%203%2C%202020).

Tomato News. (2020). *Worldwide consumption of tomato products, 2018/2019 (part 2)*. https://www.tomatonews.com/en/worldwide-consumption-of-tomato-products-20182019-part-2_2_995.html

Tomato News. (2021). *Background*. https://www.tomatonews.com/en/background_47.html

Tomato News. (2021). *Chile: 2020, a year of consolidation*. https://www.tomatonews.com/en/chile-2020-a-year-of-consolidation_2_1316.html

Tomato News. (2021). *Climate change is already shocking our industry*. https://www.tomatonews.com/en/climate-change-is-already-shocking-our-industry_2_1499.html

Tomato News. (2021). *New CAP: the Portuguese industry fears a loss of competitiveness*. https://www.tomatonews.com/en/new-cap-the-portuguese-industry-fears-a-loss-of-competitiveness_2_1410.html

Tomato News. (2021). *TOP50 tomato processing companies worldwide in 2020*. https://www.tomatonews.com/en/top50-tomato-processing-companies-worldwide-in-2020_2_1295.html

USDA - FAS. (2021). *Food Processing Ingredients - Chile*. https://apps.fas.usda.gov/newgainapi/api/Report/DownloadReportByFileName?fileName=Food%20Processing%20Ingredients_Santiago_Chile_03-30-2021.pdf

Vegetable Growers News. (2021). *Heat, drought cutting into California tomato harvest*. https://vegetablegrowersnews.com/news/heat-drought-cutting-into-california-tomato-harvest/

Voz do Campo. (2021). *A tendência de consumo passará por produtos com sabor mais próximos do tomate fresco*. https://vozdocampo.pt/2021/04/25/a-tendencia-de-consumo-passara-por-produtos-com-sabor-mais-proximos-do-tomate-fresco/

Appendix

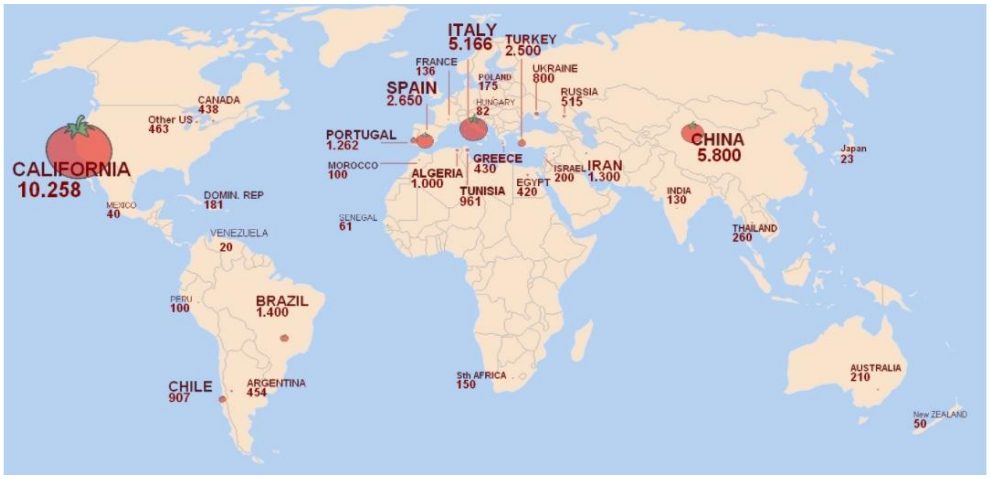
Appendix A – Production Capacity of Sugal's Plants

	Tomato Processing Capacity	Fruit Processing Capacity	Industrial Filling Lines	Food Service Filling Lines	Retail Products Filling Lines
Azambuja	4 000 tonnes/day	-	4	2	0
Benavente	8 000 tonnes/day	-	8	1	5
Seville	4 400 tonnes/day	-	3	0	0
Tilcoco	8 000 tonnes/day	1 000 tonnes/day*	6	0	0
Talca	4 000 tonnes/day	1 000 tonnes/day*	3	0	0

*The Chilean plants (Tilcoco and Talca) produce processed fruit in addition to processed tomato

Source: Data adapted from Sugal. *Website*

Appendix B – Global Tomato Processing in 2020 (in million tonnes)



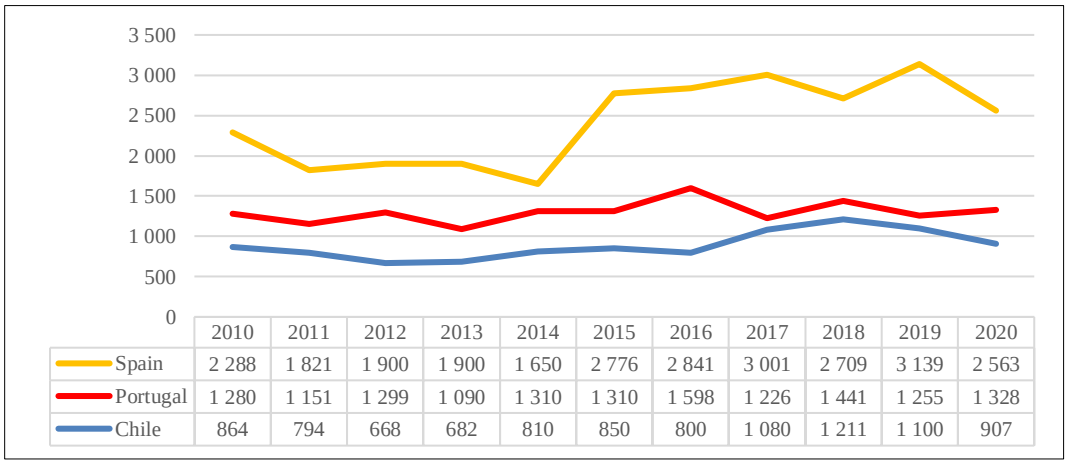
Source: Tomato News. *Background: The global tomato processing industry*

Appendix C – Fresh Vegetables Production by Type in the European Union 2016-2019 (in 000s tonnes)

FRESH VEGETABLES [1]	2016	2017	2018	2019p
Tomatoes [2]	17,958	17,399	16,731	18,000
Onions, dry	6,266	6,201	5,406	6,341
Carrots	5,599	5,779	5,310	5,400
Head Cabbage	3,791	3,743	3,397	3,700
Cucumbers	2,684	2,718	2,757	2,860
Peppers	2,520	2,654	2,584	2,580
Cauliflower	2,330	2,442	2,376	2,400
Headed Lettuce	2,288	2,365	2,239	2,220
Courgettes	1,535	1,543	1,548	1,500
Other	15,433	15,745	15,476	14,499
TOTAL	60,404	60,589	57,824	59,500

Source: European Commission. *European Statistics Handbook – FRUIT LOGISTICA 2020*

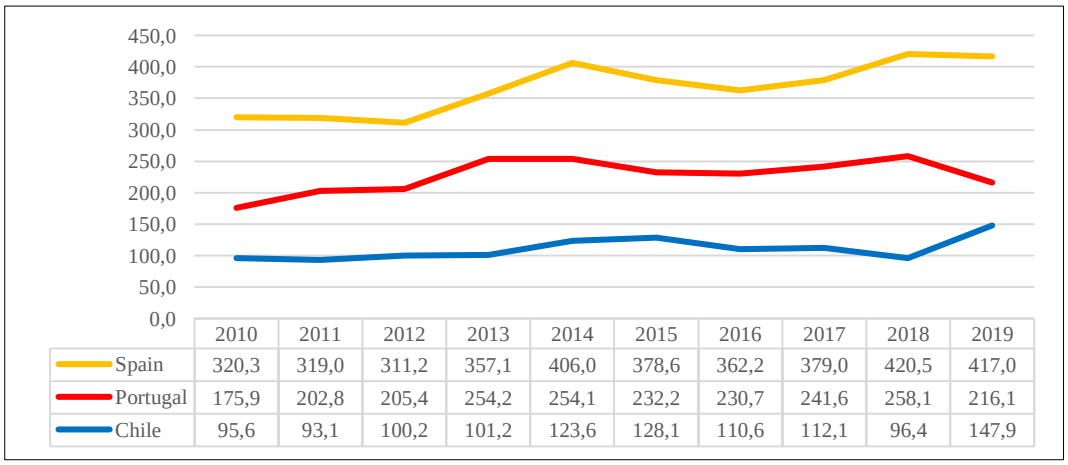
Appendix D – Production of Tomatoes for Processing in Chile, Portugal and Spain 2010-2020 (in 000s tonnes)



	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Spain	2 288	1 821	1 900	1 900	1 650	2 776	2 841	3 001	2 709	3 139	2 563
Portugal	1 280	1 151	1 299	1 090	1 310	1 310	1 598	1 226	1 441	1 255	1 328
Chile	864	794	668	682	810	850	800	1 080	1 211	1 100	907

Source: Data adapted from European Commission. *The tomato market in the EU: Vol. 1: Production and area statistics*

Appendix E – Value of Exports of Processed Tomatoes 2010-2019 (in $M)



	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Spain	320,3	319,0	311,2	357,1	406,0	378,6	362,2	379,0	420,5	417,0
Portugal	175,9	202,8	205,4	254,2	254,1	232,2	230,7	241,6	258,1	216,1
Chile	95,6	93,1	100,2	101,2	123,6	128,1	110,6	112,1	96,4	147,9

Source: Data adapted from The Observatory of Economic Complexity. *Processed Tomatoes*

Appendix F – Description of the Production Process

1. Farming

In this stage, the varieties of seeds to be planted are chosen according to different factors like the climate, the type of soil, the time of year and the end product itself. The plants germinate in a nursery for five to seven weeks and, after that, are sent to the fields to be transplanted to their final production site. There, the tomato starts to grow with the crop development always being monitored throughout it.

The final part of the farming stage is the harvesting, where tomatoes are picked in a fully mechanized way according to quality standards.

After Farming, the production of tomato differs depending on the type of end product that is being produced. They include:

2.A. Industrial Production

Uses technology to process raw materials into more concentrated products retaining their original freshness and flavor. This is a B2B endeavor. There are 5 stages of the Industrial Production:

1) Receipt and Grading: Tomatoes are received and identified and are then subject to a quality control test. The fruit must come from a Sugal Group approved supplier, be of an approved variety, be healthy, undamaged and perfectly ripe. If they pass this test, the tomatoes are then carried to the production lines through channels of running water to start the washing process.

2) Juice Preparation: The tomatoes are crushed and turned into juice with different temperatures used in the heating stage depending on the consistency and type of product that Sugal wants to produce.

3) Concentration: Drawing water from the juice by applying vacuum and temperature. Water is extracted as steam and condensation.

4) Sterilization and Filling: Elimination of any kind of bacteria through a process that starts with heating the product at high temperatures and then quickly cooling it. The process ends with the filling and packaging of the product where aseptic bags are used in a completely sterile environment.

5) Storage and Shipping: The product is stored in groups depending on the type of product and shipped to the food industry clients or used to produce retail products in-house.

2.B. Retail Production

For products designed to be consumed directly by consumers (B2C). The only plant that has this type of production is the Benavente one. There are 3 stages of the Retail Production:

1) Industrial Kitchen – Ingredients are prepared according to a recipe devised by the R&D center. Once ingredients have been added, everything is mixed for 10 minutes.

2) Heat Treatment – Through heating and cooling, the product is perfected to ensure its quality upon consumption.

3) Filling and Packaging – The end product is transferred to the packaging section where four filling techniques are deployed depending on the type of package and product.

2.C. Food Service Production

Stream of production that sells to the HORECA channel. Foodstuffs may be produced directly from fresh tomato or indirectly from tomato paste, in accordance with the needs of each client, and sold under the Sugal or the client's brand. It is produced in both Portuguese plants. There are 5 stages of the Food Service Production (many similar to the ones for Industrial Production):

1) Receipt and Grading: Same as in Industrial Production.

2) Juice Preparation: Same as in Industrial Production.

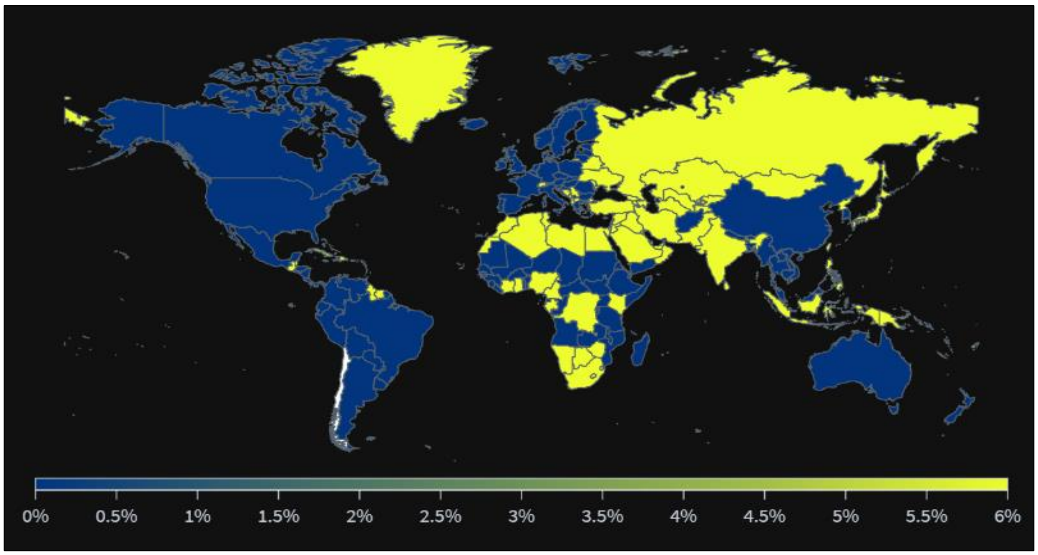
3) Concentration: Same as in Industrial Production.

4) Filling and Pasteurization: The tomato pulp which is either concentrated or crushed is placed in cans or pouches in a filling chamber and it is pasteurized.

5) Storage & Shipping: The product is then stored in a group depending on the type of packaging and is either shipped to the food industry or used for internal production.

Source: Text adapted from Sugal. *Website*

Appendix G – Tariffs paid by Chilean exports of processed tomatoes for each country



Source: The Observatory of Economic Complexity. *Processed Tomatoes in Chile*

Appendix H – Sustainability Initiatives

Packaging

2007	• Introduction of plastic bins: increased bins lifetime by around 100% reducing the need to buy new ones
2015	• Introduction of tetra recart packaging to replace tin cans and strong push for this packaging format to the market (20% Life Cycle Assessment (LCA) vs cans and glass) • Project to increase to >50% the number of returnable metal bins, increasing the lifetime from 1 year to 3-4 years
2019	• Introduction in house plastic bottles plant with reduction of inbound transport emissions
2020	• Increase transport efficiency by increasing the cargo of each container (more units per pallet), thus reducing the number of transports and respective emissions
2021	• Introduction of 30% recycled PET in plastic bottles (40M bottles) • Bottle caps 100% recyclable

Production

At the end of 2019, the Group launched an Excellence Centre with the aim of optimizing the sustainability and development of the tomato sector, through innovation, demonstration and dissemination of technical knowledge. Initiatives included:

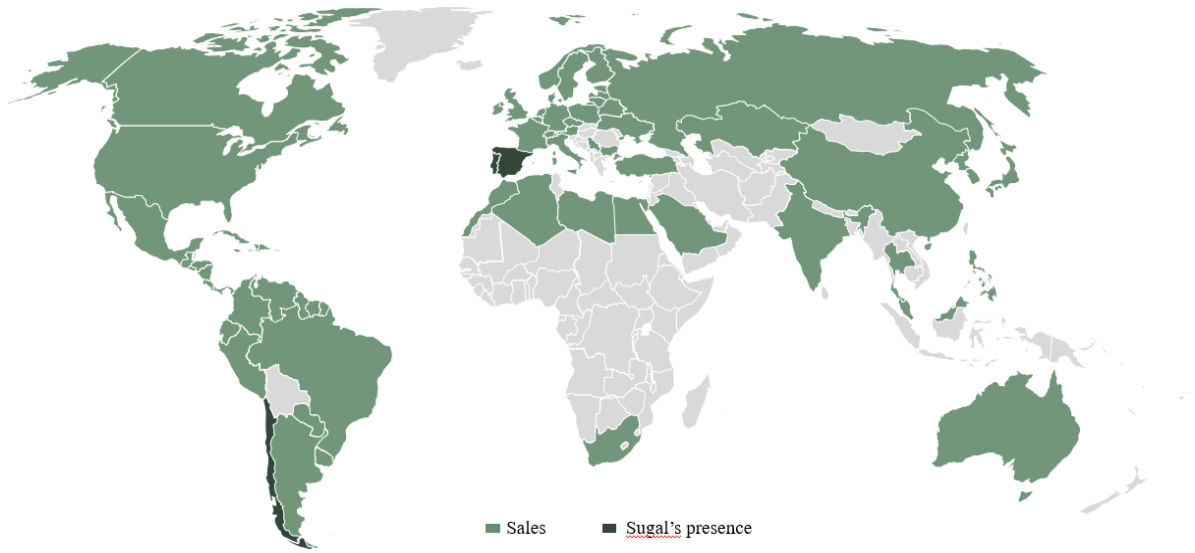
- Fertilizer testing and use reduction (soil and environmental preservation)
- Varietal experiments (optimize yields and product fit)
- Rotation crops (important for soil preservation)
- Late crop trials (optimize production)
- Traceability in inbound logistics (quality reassurance and process optimization)
- Automation initiatives in the paste production process in order to reduce energy consumption (process optimization)

Source: Sugal. *Company's reports*

Appendix I – Sugal's Tetra Pack Packaging

Source: Sapo Lifestyle. *Guloso é pioneira mundial em nova embalagem para tomate*

Appendix J – Sugal's Geographical Presence



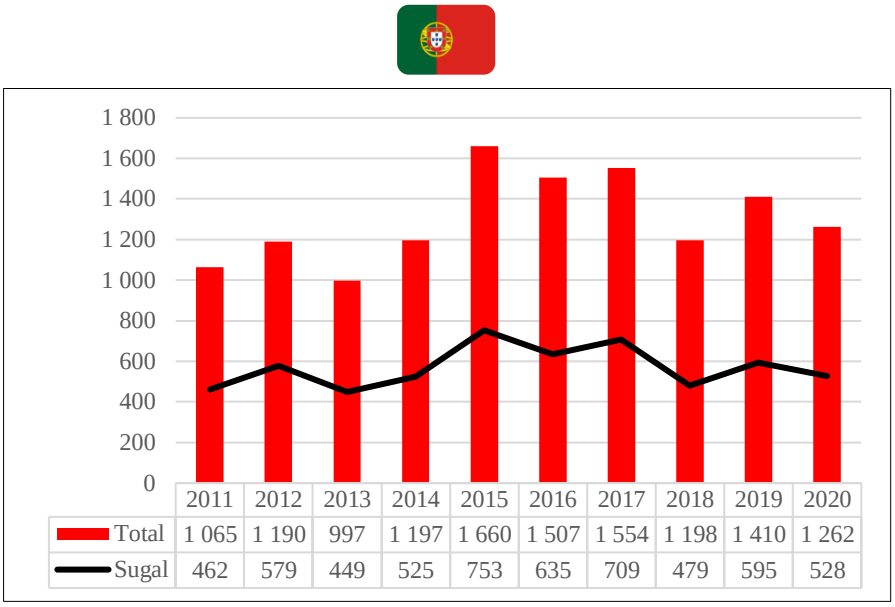
Source: Sugal. *Company's reports*

Appendix K – Top Global Producers of Tomato Paste by Volume 2020

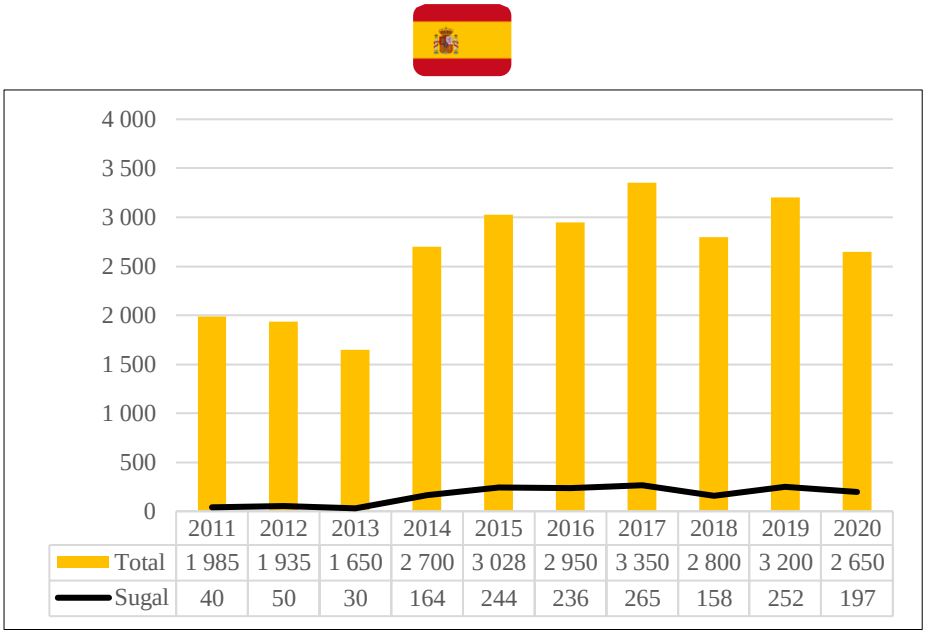
					Processing Capacity		
Rank 2020	Company	Country	# Factories	Processing Regions	Daily[1]	Yearly[1]	2020 Prod[1]
1	**Morning Star**	USA	3	California	67	4,900	4,000
2	**Sugal Group**	Portugal	5	Portugal, Chile, Spain	30	2,550	1,880
3	**Tunhe**	China	12	China	40	2,080	1,770
4	**Ingomar PC**	USA	2	Spain, Portugal, China, USA	16	1,550	1,316
5	**Conesa**	Spain	9	California	29	1,500	1,068
6	**JG Boswell**	USA	2	California	15	1,200	860
7	**Los Gatos**	USA	1	California	11	1,040	830

Source: Tomato News. *TOP50 tomato processing companies worldwide in 2020*

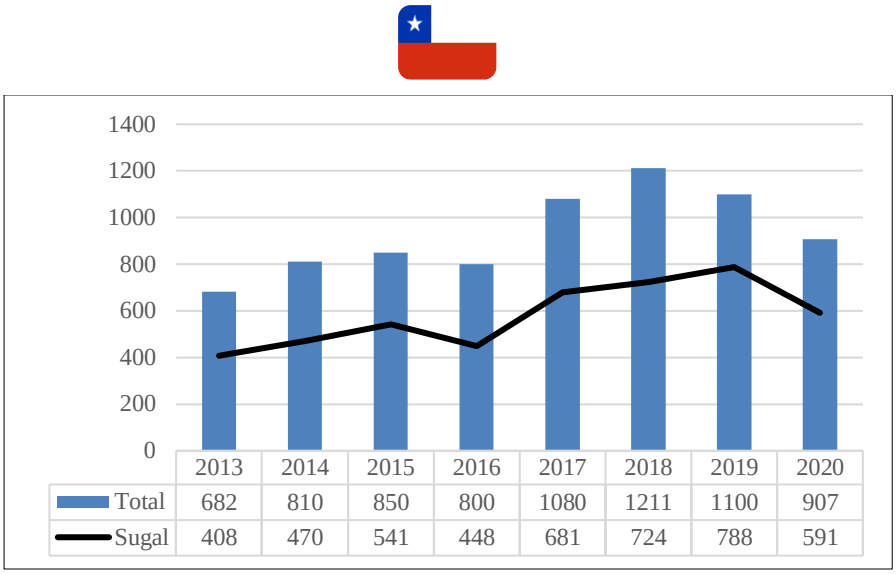
Appendix L – Total Production of Processed Tomatoes and Sugal's Contribution to Total in Portugal, Spain and Chile (in 000s tonnes)



	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Total	1 065	1 190	997	1 197	1 660	1 507	1 554	1 198	1 410	1 262
Sugal	462	579	449	525	753	635	709	479	595	528

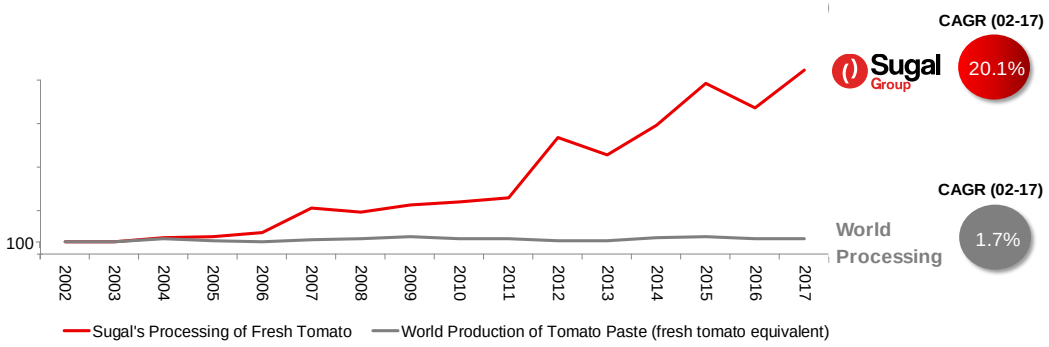


	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Total	1 985	1 935	1 650	2 700	3 028	2 950	3 350	2 800	3 200	2 650
Sugal	40	50	30	164	244	236	265	158	252	197



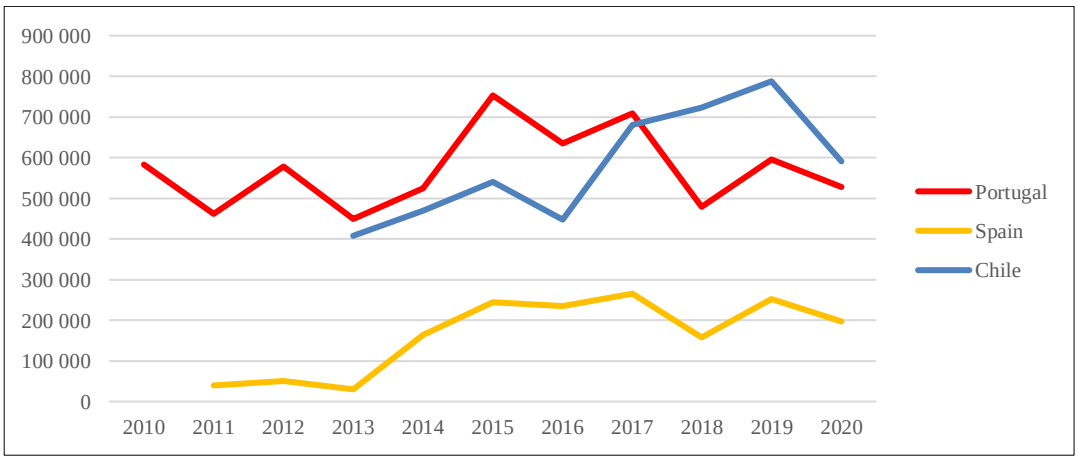
Source: Data adapted from Sugal. *Company's reports* & Tomato News. *Background: The global tomato processing industry*

Appendix M – Sugal's Fresh Tomato Processing vs the World's tomato processing sector (index 100 = 2002)



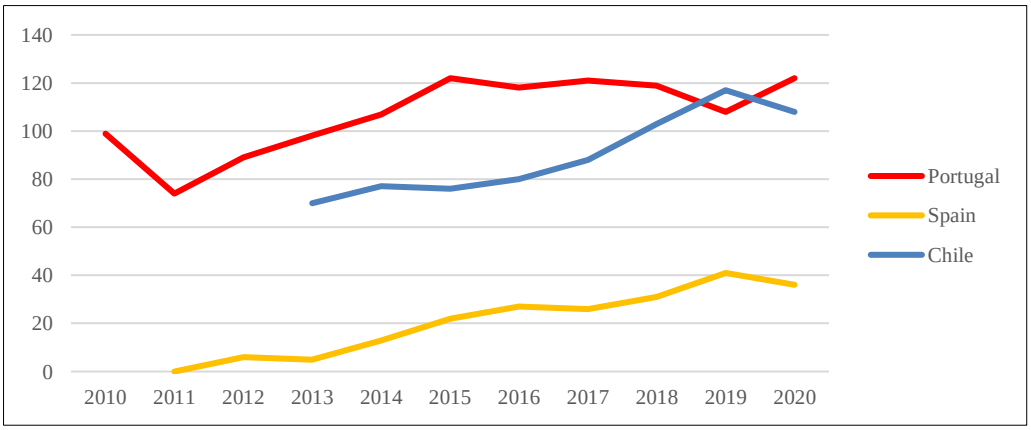
Source: World Processing Tomato Council & Tomato News as cited in Sugal. *Company's reports*

Appendix N – Evolution of Sugal's Volume of Production in Portugal, Spain and Chile 2010-2020 (in tonnes)



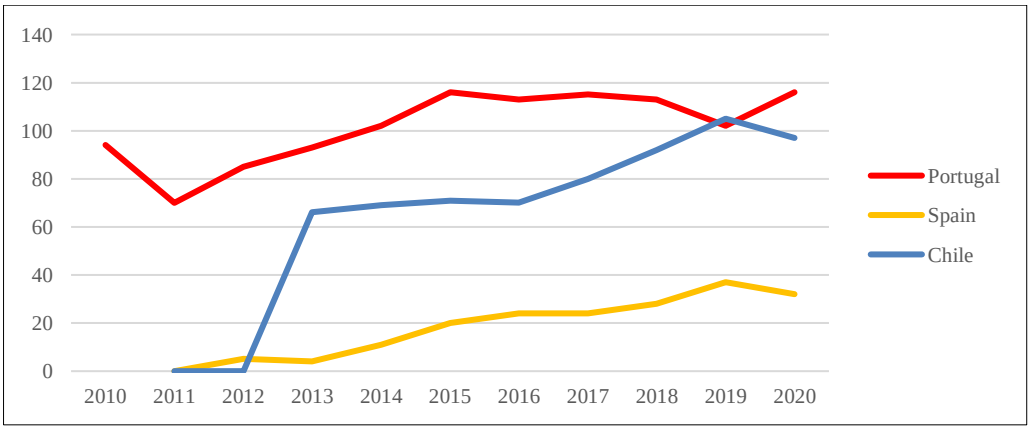
Source: Data adapted from Sugal. *Company's reports*

Appendix O – Evolution of Sugal's Turnover in Portugal, Spain and Chile 2010-2020 (in M€)



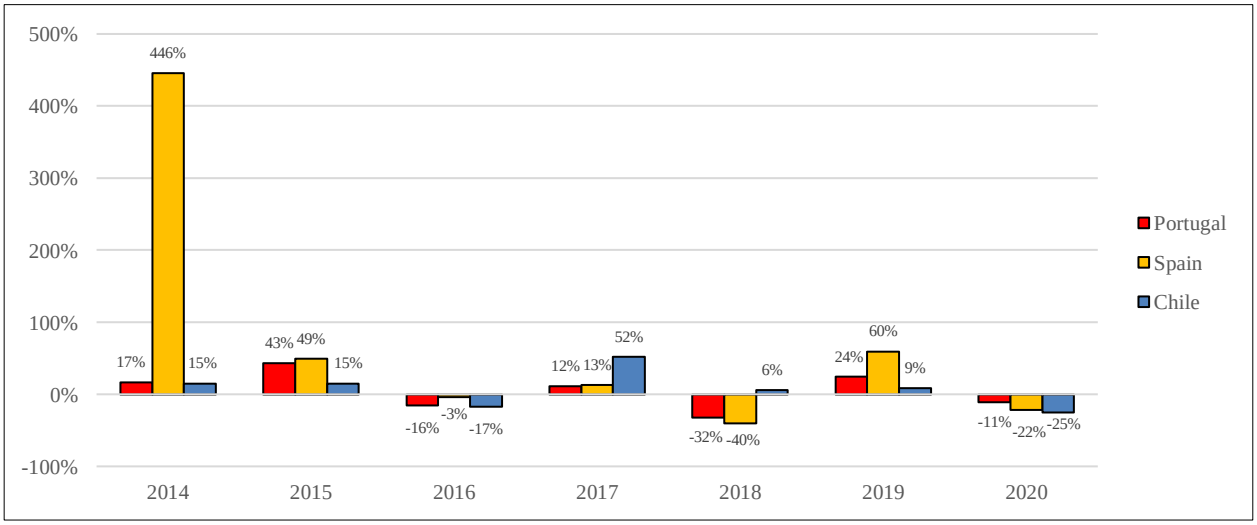
Source: Data adapted from Sugal. *Company's reports*

Appendix P – Evolution of Sugal's Exports in Portugal, Spain and Chile 2010-2020 (in M€)



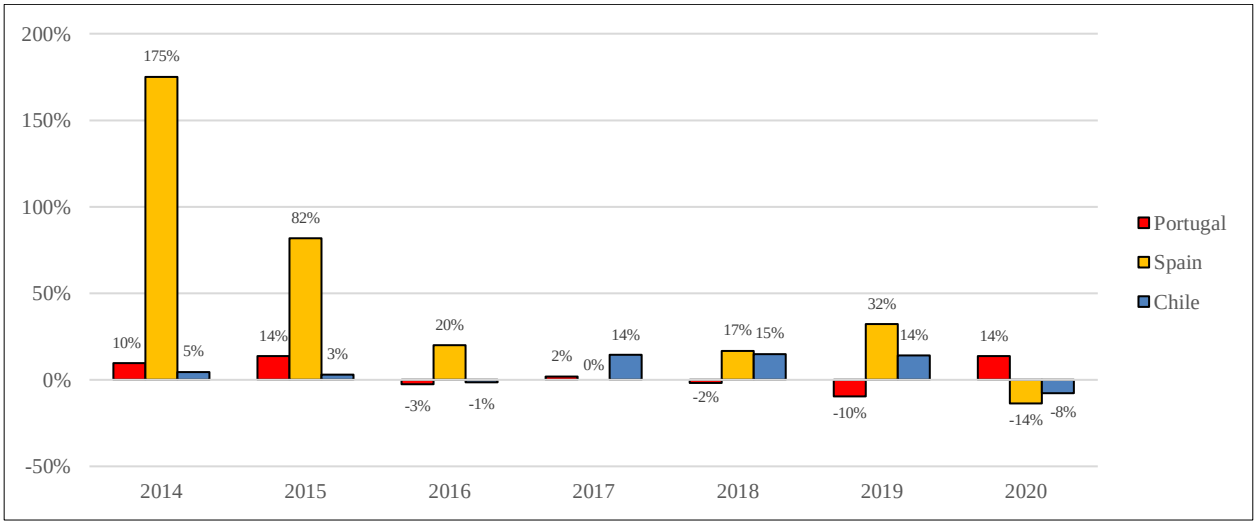
Source: Data adapted from Sugal. *Company's reports*

Appendix Q – Sugal's Production Growth in Portugal, Spain and Chile 2014-2020 (in %)



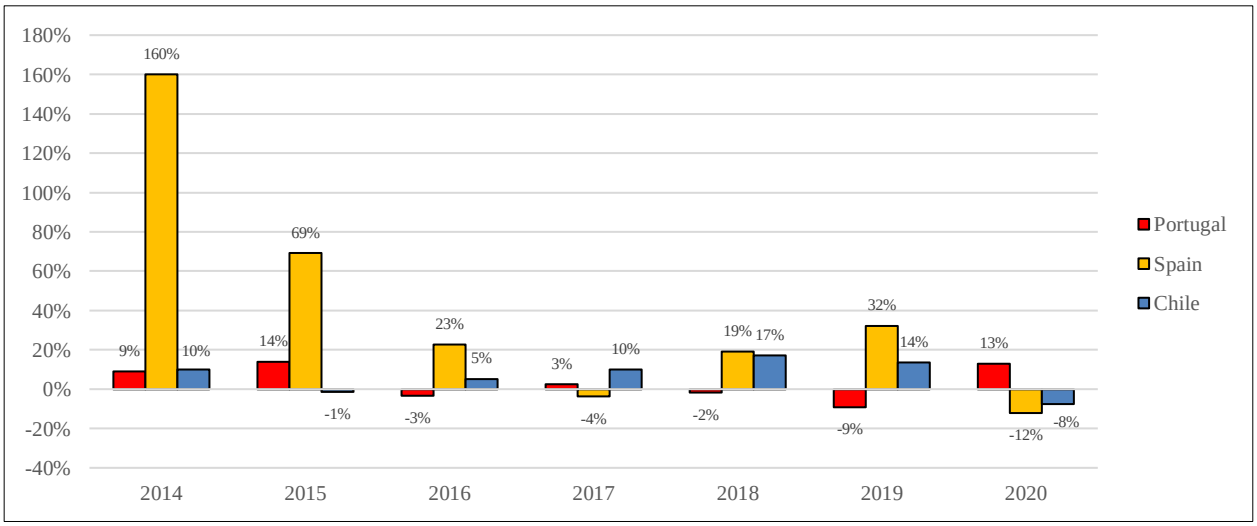
Source: Data adapted from Sugal. *Company's reports*

Appendix R – Sugal's Exports Growth in Portugal, Spain and Chile 2014-2020 (in %)



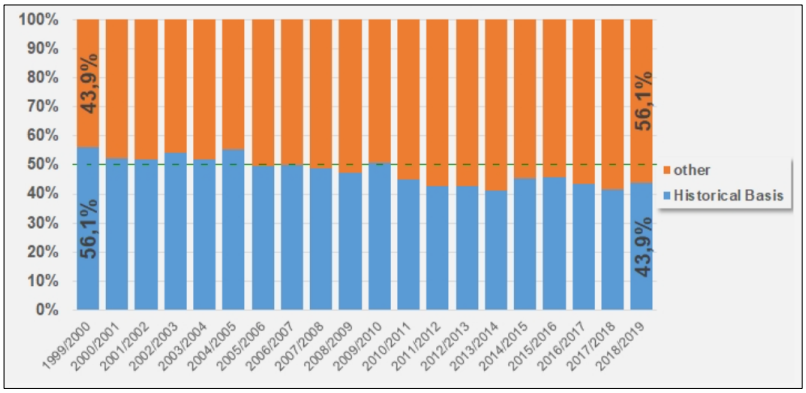
Source: Data adapted from Sugal. *Company's reports*

Appendix S – Sugal's Turnover Growth in Portugal, Spain and Chile 2014-2020 (in %)



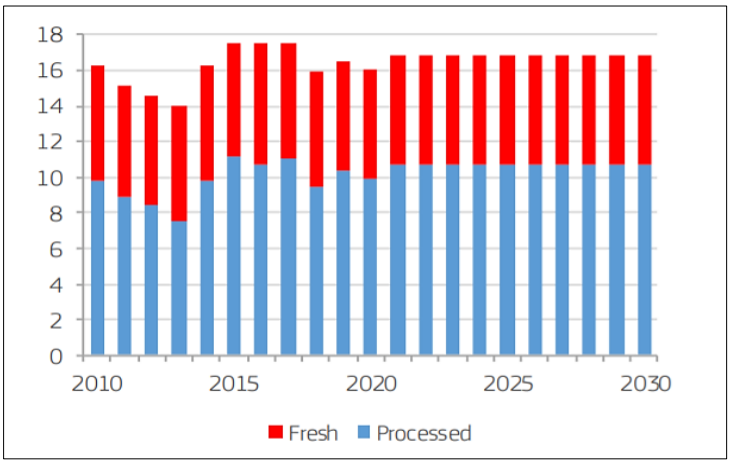
Source: Data adapted from Sugal. *Company's reports*

Appendix T – Balance of historical and emergent consumption of processed tomatoes (in %)



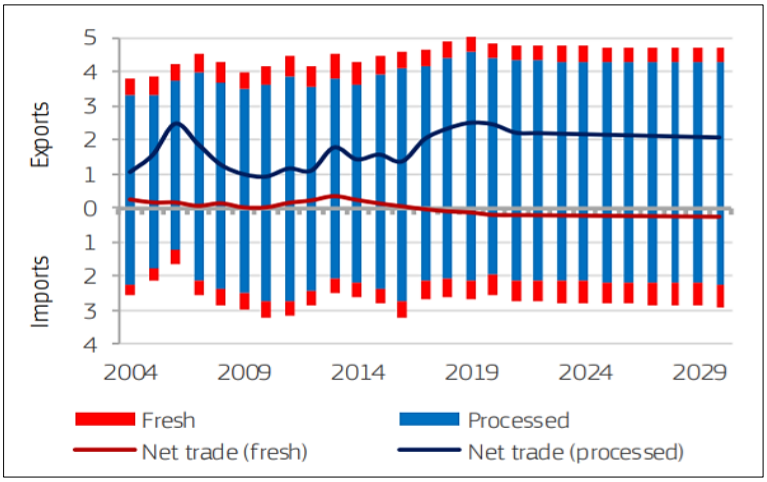
Source: Tomato News. *Worldwide consumption of tomato products, 2018/2019*

Appendix U – Forecast of fresh and processed tomato production in the EU (in M tonnes)



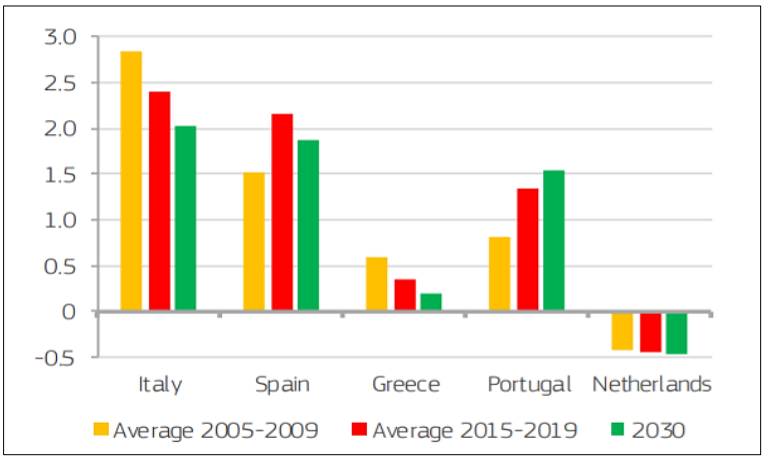
Source: European Commission. *EU Agricultural Outlook 2020*

Appendix V – Forecast of fresh and processed tomato trade in the EU (in M tonnes)



Source: European Commission. *EU Agricultural Outlook 2020*

Appendix W – Past average and forecast of processed tomato trade for group of biggest producers (in 000s tonnes)



Source: European Commission. *EU Agricultural Outlook 2020*